

WorldRadio

Year 16, Issue 5

November 1986 • \$1

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JAMES MAXWELL
W6CUF
PO BOX 473
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Ham shack on space station

Norm Brooks, K6FO

"When the U.S. space station is built in 1993, and manned (and womaned) in 1994, there should be an Amateur Radio station aboard. I'm not the only one who feels that way," said Dr. Tony England, W0ORE. "There are a whole lot of people in the space program who feel that way." Speaking to 1,100 dinner banquet attendees, Tony was the featured speaker at the 1986 ARRL National Convention at San Diego September 6, 1986.

Dr. England said the minimum station requirements would be two-way voice and two-way video. There are three objectives in having such an amateur station aboard.

Recreation

First, the amateur station would provide recreation radio for the people on board. They will be spending time, for as long as six months, in a living space not much bigger than a large house trailer. The Amateur Radio contacts will help them maintain their sanity.

Repeater

Secondly, the radio facility could be used from the ground when the astronauts and other personnel up there are not using it. It could be configured into a sort of OSCAR. Thus, it would not sit idle and be a wasted resource when the folks in space are not using it.

Education

The third and most exciting use for the amateur station in the space station would be to use it as an educational tool. There could be a roving equipment van or vans on the ground, loaned to radio clubs to set up at classrooms. School science classes could have a session a month with the space station. The scientists could tell the kids in the classrooms about the excitement of the experiments on board. The young people could interact in real time. They could tell what their concerns were and what they would like to hear more about.

Essentially, this would make the space station experience real for the young people in the classrooms. Thus,

Amateur Radio would broaden its commitment to public service by adding education. "I think that's a real service (please turn to page 12)"



Dr. Anthony England, W0ORE, the astronaut who operated two-way SSTV from an orbiting Space Lab shuttle last year, was keynote speaker at the convention's Saturday evening banquet, September 6.

Hams 'drop everything' to help Cerritos

Carl Nelson, NJ6K

It was one of those weekends that Americans look forward to: Labor Day weekend. August 31 was a beautiful sunny Sunday in Southern California. A DC-9 jetliner, Aeromexico Flight 489 out of Mexico City, was heading westward on its final approach to LAX, the Los Angeles Airport. A Piper Archer had left the Torrance airport a short time before, carrying the pilot, his wife and their daughter. They were on their way to an outing at Big Bear in the San Bernardino Mountains — about 100 miles distant. In LAX, a group of folks waited for the arrival of the jetliner so they could enjoy time with their friends and family members.

But the jetliner never arrived at LAX. And the Piper never reached Big Bear. In Cerritos, a town southeast of Los Angeles, several observers on the ground peered skyward and watched the graceful jetliner winging its way toward

its destination. Suddenly the small plane appeared. "My God!" one woman said, "they look like they're going to hit." And collide they did.

The small plane struck the jetliner near its tail section and witnesses say the small plane seemed to "float" to earth. It crashed in a school yard, killing the three occupants. The jetliner, its tail section severed, flipped over on its back and plummeted to the earth, leaving a swath of destruction and fire as it ripped through a housing tract. Some 90 persons lost their lives in the planes and on the ground. Wreckage, personal effects, and remains of passengers and residents were scattered over a wide area.

In a short time, radio amateurs were on the scene. They came from the Associated Radio Amateurs of Long Beach, the Downey ARC, the Western Amateur Radio Association, the Rio Hondo ARC, and from other organizations of hams. The Red Cross, too, was soon in full

service, as were the fire departments from various cities, and police and sheriff personnel.

As information began to filter through, a tragic picture unfolded. The jetliner carried 64 persons. There were three occupants in the light plane. All lives were lost. In addition, at last count, 24 persons perished in the burning homes. In one home a party was in progress, and the lives of 18 were snuffed out.

There were so many hams involved that it is difficult to attempt to identify them. Nick Nicholson, W6HRD, Emergency Coordinator for Sub-Area 4, Los Angeles Section, reported soon after the crash, as did Pat Joyce, WA6DYS, who resided quite near the crash site.

The morning following the accident, I visited the shelter which the Red Cross had set up in the Cerritos High School gymnasium and found Dan Wilson, (please turn to page 47)



Worldradio

November 1986

Vol. 16, No. 5

Is published monthly by
Worldradio, Inc.
2120 28th Street
Sacramento, CA 95818
(916) 457-3655

Subscription Dept.
Worldradio
P.O. Box 271309
Escondido, CA 92027-0770
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Worldradio (USPS 947000) is an international conversation. You are invited to participate.

Our goal is to be a valuable resource of ideas and experiences beneficial to the Amateur Radio Community. We publicize and support the efforts of those who bring the flame of vitality to this avocation.

You readers are participants — an alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and

humanitarian uses of Amateur Radio.

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Subscription rates: \$11.00 per year, \$21.00 for two years, \$30.00 for three years and \$110.00 for life; \$3.00 extra per year for surface mail delivery outside the U.S. Please remit international postal money order. IRCs will be accepted.

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Space Symposium

AMSAT will hold its 4th Annual Space Symposium and Annual Meeting at the Dallas/Fort Worth Airport Hilton Hotel on November 7-9.

Speakers at the Saturday Symposium include experts from around the world who will address the latest in OSCAR news including FO-12, Phase 3C and the new Phase 4 Program. Featured speaker is Dr. Martin Davidoff, K2UBC, satellite expert and author of the popular *Satellite Experimenter's Handbook*. The bountiful banquet prize list is capped by a new ICOM 1271A transceiver. The early registrant's prize list includes an Alinco 2-meter HT.

Additional details and registration information is available at AMSAT HQ, (301) 589-6062. □

JARL news service

The Japan Amateur Radio League is going into the Amateur Radio news bulletin service.

Using its JA1RL station, the JARL has started transmitting bulletins of interest and relevant information to its members and other Japanese amateurs.

This is the same station that is used for the regularly scheduled code practice transmissions on 7.030 MHz.

The JARL is inviting SWL reports from around the world. Tnx ARRL. □

New England DXCC annual banquet

The annual New England DXCC Banquet will be held November 8, at the Masonic Lodge, Concord Center in Concord, Massachusetts.

Afternoon and evening sessions will feature several interesting topics, including "Living in China" (Dick Eastman, K1OJH) and "Deductible DXpeditions?" (Earthwatch). Dinner speaker is Bob Locher, W9KNI. Building opens at 9 a.m. Shopping nearby. Prizes offered. Tickets are \$3 afternoon, \$16.95 evening.

Mail before October 27, 1986 to Charles A. Lukas, Jr., W1DOH, RFD #1, 24 Durkee Rd., Acton, MA 01720. □

.....

Fred Bonavita, W5QJM — our QRP columnist — is on vacation.

.....

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New ARRL Section

The ARRL's Executive Committee has approved the creation of a new West Texas Section. It is comprised of the western 40% of the Lone Star State, with 952 amateurs on the rolls as League members.

The effective date for this change is January 1, at which time the remaining sections in Texas will be restyled as the North Texas and South Texas Sections, respectively. Tnx ARRL. □

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Dr. Anthony England, W0ORE, answering questions at the Youth Forum.

Youth Forum

Norm Brooks, K6FO

The 1986 ARRL National Convention at San Diego, on September 6, started something that will continue on convention agendas into the foreseeable future. It was a very successful Youth Forum. It was refreshing to see so many young people, 7 to 14 years of age, at an amateur convention. Over 150 of them attended the three-hour forum conducted by Dr. Anthony "Tony" England, W0ORE.

In addition to Tony, there were four panelists to assist in answering questions: Gordon West, WB6NOA, a well-known teacher and technical writer (and columnist for *Worldradio*); Harold Price, NK6K, a computer communications consultant, who is also very active in amateur satellites; Jerry Boyd, KG6LF, Chief of Police, City of Coronado, California; and Scott Springate, N7DDM, who is a teenager (17) and Contributing Editor for *QST*.

To get things going, each panelist made a short introductory speech.

Gordon West

Gordon asked, "What is the hardest part of getting your amateur license?" Some answered "the code." Others "the technical part." Gordon accepted neither as correct. His answer: "Getting to your first class session."

Harold Price

Harold's advice on the treatment of Elmers: If he loans you a radio and you break it, he'll be glad to fix it for you to show you how much he knows. But don't break it so seriously that he can't fix it — he'll be embarrassed!

Scott Springate

Scott was first licensed at age 11. His

mother saw an ARRL public service announcement and suggested he write. He did. They forwarded his letter to a local amateur who invited him to a class, and he got his Novice license. He obtained his General license less than a year later.

He wrote to the ARRL complaining that there was nothing in *QST* for young people. He offered to write a column for *QST* and they took him up on his offer. Scott tried to start a ham club at his school, and wrote articles for the school



W0ORE signs autographs. K6FO

paper. He found that nothing worked like the personal touch. We must all personally work to get our friends into Amateur Radio.

Jerry Boyd

Jerry feels Amateur Radio helps a person in three ways:
(please turn to page 15)

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1986 ARRL National Convention

Christine Wilson, KA6TAL

San Diego, California was the hub of much ham activity on September 5, 6 and 7. That weekend, 5,000 hams converged on the Town & Country Hotel for the 1986 ARRL National Convention.

Exhibits, forums, food and plenty of "eyeball QSOs" are what attract visitors to these conventions year after year. This year was no exception. The special attraction at this convention was keynote speaker Dr. Anthony "Tony" England, W0ORE, who has done much to promote the cause of Amateur Radio in the realm of space exploration. (England's operation of two-way scan television from the orbiting space shuttle during the Space Lab mission last year provided thrills in many classrooms.

Roy Neal, K6DUE, who was named "Amateur of the Year" at the 1986 Dayton Hamvention, was Master of Ceremonies.

Dr. England was also the moderator for a special forum aimed at youth — "Youth Looks At Amateur Radio." (See article on page 3.) This forum provided an opportunity for young folks to hear about the exciting hobby of Amateur Radio from a blue ribbon panel of experts, and to see and operate Amateur Radio gear, incorporating the latest high-tech features. The objective was to share views with youth about Amateur Radio, not about youth and Amateur Radio.

The importance of bringing young people into this hobby was emphasized again Saturday evening, at the banquet, when Advanced Electronic Applications (AEA) presented the first "Amateur Radio Ambassador Award" to Mary Duffield, WA6KFA, a former teacher who has spent the past several years encouraging young people to become active in Amateur Radio (See article on page 6.)

Dr. England's banquet speech included slides and a movie, showing some of the amazing experiments and developments being made in the space industry. One conventioneer noted, "Tony England is a hero to young people." He is certainly a strong link between the tradition of Amateur Radio and the space-age future that many youngsters will be experiencing.

Other forums included: Public Information, Ham Radio and the Law, HF Antenna Design, State of the Art in RFI/EMI, FCC, ARRL, Ten-Ten, DX, Spread Spectrum, A New Look at MARS, AMSAT, HF Packet Operations, RTTY Is Fun, and Measuring Antenna Performance. Quads, Yagis and Quagis.

Throughout the convention, thou-

sands of people visited the 74 indoor exhibits and the outdoor flea market. I enjoyed talking to the many readers who stopped by to say "Hello" at our Worldradio booth!

A few lucky hams walked away with prizes from drawings. Alternate events were also scheduled, for the sake of XYLs and others who were interested, ranging from CPR Techniques to Makeup and Skin Care.

Congratulations on this well-organized convention should go to Convention Chairman Walt Hicks, W6UZL.

DXers present also praised Sybil Allbright, W6GIC, who was Registration Chairperson. She provided banquet table seating charts early Saturday, so banquet participants could walk directly to their tables at banquet time. (Visalia DX Convention, please note!)

San Diego's ideal climate enhanced the weekend of for many, as did the luxurious accommodations provided by the hotel. Next year's national convention will be in Atlanta, Georgia — see you there. □

New ham videotape is 'in the works'

Several of us involved with the production of this newsletter are also involved in the early planning stages of what we hope will eventually become a new Amateur Radio video presentation aimed at replacing the 1979 film "The World of Amateur Radio."

In order to save as much money as possible for whoever eventually funds this project, we are collecting and cataloging any available film and videotape dealing with any aspect of Amateur Radio: material shot on 16mm film at 24

fps — silent, magnetic or optical sound; and professional television videotape formats are acceptable. These include 3/4" U-Matic, Betacam, M-I or M-II or 1" type C tape. Not acceptable are 8mm or super 8mm film, or any home format video. Screen credit will be given for any donated footage used. We will cover cost of transferring usable film to videotape.

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— Westlink Report □

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WA6KFA wins Ambassador Award

Mary Duffield, WA6KFA, a retired Santa Cruz, California school teacher, has been named winner of the first "Amateur Radio Ambassador Award" by Advanced Electronics Applications of Lynwood, Washington. The award includes a \$1000 prize.

Mary was chosen from a list of 50 nominees for her work encouraging young people to communicate with the world using computers and Amateur Radio. The award was created with the hope of encouraging radio amateurs to promote the Amateur Radio Service to the public. The award was presented at the Grand Banquet of the 1986 ARRL National Convention on September 6.

Mary co-chairs the Redwood Youth Foundation where this work with youngsters takes place. She received numerous nominations from co-workers, students and even others outside the



Debbie Paine, KB6GJJ, is a fervent believer in friendship between young people — wherever they live.

Amateur Radio community.

"I was totally flabbergasted when Mike Lamb (N7ML, AEA president) called me," Mary told Worldradio. "It was a delightful surprise. On the spur of the moment, I asked if I could bring along a couple of the kids — a boy and a girl." After all, she said, "the kids are what it's all about." So Debbie Laine, KB6GJJ, from Loma Prieta High



Jason Barasorda, KB6MER, went from Novice to Advanced in one year, at age 12. He's now 13.



Mary Duffield, WA6KFA, addresses the banquet audience after winning AEA's "Amateur Radio Ambassador Award." To her left is Roy Neal, K6DUE.

School, and Jason Barasorda, KB6MER, of Del Mar Middle School, accompanied Mary to San Diego. Debbie and Jason each spoke briefly at the banquet about how Amateur Radio has affected their lives.

— Information from ARRL Letter and Westlink Report □

Hams fight to save W6AM site

History and progress have met head-on in a controversy over what is to become of the Wallace Ranch, in Rancho Palos Verdes, California — site of the once-famous W6AM station, operated for 40 years by Don C. Wallace.

Radio and history buffs are hoping to convince Rancho Palos Verdes planning commissioners to set aside part of the ranch as a historic site, preserving Wallace's ranch house and radio equipment. This has put them at odds with Ronald Florance, a developer who wants to build 83 luxury homes on the 24 hilltop acres.

Florance has offered to move the ranch house to other locations, such as the city's Point Vicente Interpretive Center museum or the Civic Center, but radio advocates say the historic value of the Wallace Ranch lies in the station site itself. (Wallace personally selected it as the best location for radio transmission on the West Coast while scouting sites in the '20s for Press Wireless, an overseas radio communications company.)

ARRL Vice President Jay Holladay, W6EJJ, told commissioners that this Amateur Radio group could "provide a few thousand dollars" toward preservation costs.

— Information from L.A. Times article by Gerald Faris, 6/1/86; submitted to Worldradio by Howard Lang, WA6UFM □



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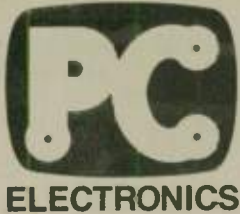
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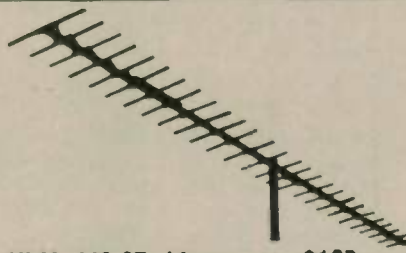
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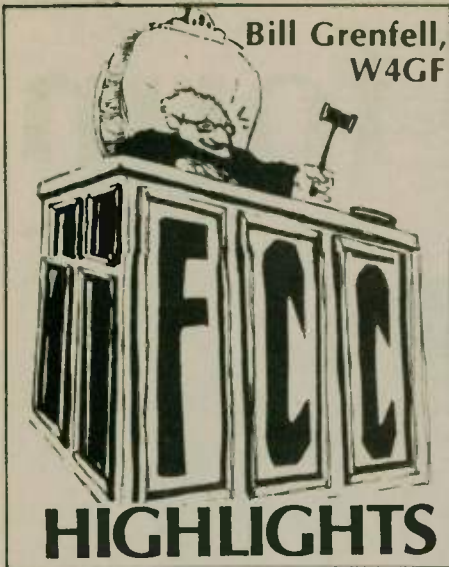
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7/86



The effective date of the rules adopted in the FCC order transferring the maintenance of Amateur license question pools from the FCC to the volunteer examination coordinators, reported in last month's **HIGHLIGHTS**, was not available at the time this month's **HIGHLIGHTS** was written.

"The Commission also acted to allow volunteer examiners to prepare examination question sets now rather than wait until January 1, 1987, to prepare them." The Order in FCC's PR Docket No. 85-196 provides that "The effective date will be announced in a future Public Notice." The Rule sections amended are: 97.21(a), (b), (c), (d); 97.27(a), (b), (c), (d); 97.29(a); 97.517(a), (b), (c); and 97.521.

On 08/23/86, the ARRL's Executive Committee moved to file a petition with the FCC for reconsideration and stay of the effective date in PR Docket 85-196 to preserve the right of appeal should the ARRL Board decide to appeal to the U.S. Courts.

"The Committee strongly felt that the adopted rules were not specific regarding the difficulty of the respective written examination elements. This creates a likelihood that amateur exams will, over time, drift away from the standardization that the FCC itself acknowledges is essential to the examination program." (ARRL Letter, 09/02/86)

FCC's July 1986 Notice of "International Amateur Radio Arrangements" lists the countries with which arrange-

ments have been made for the exchange of third-party messages between amateur stations and for reciprocal amateur operating privileges.

There appears to be no new arrangements since the December 1985 Notice. However, in the reciprocity list, the territories and possessions of two countries are now included. They are: *France* — French Guiana, French Polynesia (Gambier, Marquesas, Society, and Tubal Islands and Tuamotu Archipelago), Guadeloupe, Ile Amsterdam, Ile Saint Paul, Iles Crozet, Iles Kerguelen, Martinique, New Caledonia, Reunion, Saint Pierre and Miquelon, and Wallis and Futuna Islands. *United Kingdom* — Bermuda, British Virgin Islands, Cayman Islands, Falkland Islands, Gibraltar, Hong Kong, Montserrat, Saint Helena, and Turks and Caicos Islands.

Two petitions for reconsideration of its April 21, 1986 Report and Order in PR Docket 85-22 concerning rules for frequency coordination of repeaters were dismissed by the FCC because they were filed after the specified June 12, 1986 comment deadline. The proceeding amended the rules "... to clarify the relationship between coordinated and non-coordinated repeater and auxiliary amateur operation."

The FCC adopted a Memorandum Opinion and Order in PR Docket 85-23 clarifying the wording and eliminating confusion of several of the Amateur Radio Service Rules, effective 10/04/86. They are sections: 97.3(k) National Ra-

dio Quiet Zone; 97.3(dd) Coordinated station operation; 97.7(g)(8) and (9) (regarding use of the 902-928 MHz band); 97.61(c) Authorized emissions (above 144.1 MHz); 97.67(i) Maximum transmitting power (in the 902-928 MHz band); 97.85(g) (to cross-reference 97.3(dd)).

On 08/07/86, the FCC denied a request that its "... rules be clarified to specify that the permission given to participate in amateur radiocommunications by the station licensee to a disqualified third party be willful."

In its report of the denial, FCC stated: "Before the Commission can impose a sanction, the Communications Act requires a finding that the conduct was knowing, willful or repeated. There is no need to restate this in the individual operating rules."

By action on 08/07/86, the FCC made it clear that pulse emissions by amateur stations are permitted in the 902-928 MHz band. Included was amendment of "... Section 97.67(i) of the rules to clarify that while no amateur station transmissions are permitted on 902-928 MHz within 150 miles of the White Sands Missile Range, reduced-power transmissions (at 50 watts peak envelope output power) are permitted between 150 and 200 miles from the boundaries of White Sands Missile Range. The FCC also amended Sections 97.7(g)(8) and (9) to clarify that secondary status bears no relation to the areas of prohibited operation (please turn to page 10)

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of September 1, 1986.

For more information about call sign assignment in the Amateur Radio Service, see Section 97.51 of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17325.

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	NU0M	KE0HS	N0HKE	KA0YQH
1	NG1K	KB1ZV	N1EIP	KA1OVY
2	NT2I	KD2VC	N2GPP	KB2BNJ
3	NC3S	KC3ZB	N3FCR	KA3QAB
4	AA4VS	KJ4ZC	N40QL	KB4UQB
5	WQ5G	KF5QL	N5JQV	KB5ARZ
6	WX6E	KI6JY	N60ER	KB6OAK
7	NW7L	KE7TP	N7INQ	KA7ZOZ
8	NT8J	KE8HB	N8HTI	KB8AHI
9	NN9L	KD9ZE	N9GAR	KA9WAV
N. Mariana Is.	AH0E	AH0AC	KH0AI	WH0AAF
Guam	AH2W	AH2BI	KH2CD	WH2AKB
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra, Jarvis Is.	AH5A			
Hawaii		AH6HG	NH6HC	WH6BLC
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AC	KH8AD	WH8AAW
Wake Wilkes Peale		AH9AC	KH9AC	WH9AAE
Alaska		AL7IH	NL7JE	WL7BLA
Virgin Is.	KP2O	KP2BA	NP2BV	WP2AFD
Puerto Rico	WP4V	KP4KV	NP4YT	WP4GAR

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FCC Highlights

(continued from page 8)

tion for the 902-928 MHz band." These rules became effective 10/04/86.

On 08/05/86 the ARRL filed a "Request for Imposition of Forfeiture and Other Relief" with the FCC on behalf of its members against the Pacific Gas and Electric Co. (PG&E) for repeated and willful refusal to rectify serious, harmful interference to the operation of Amateur

Radio stations WB6SXL and W6VLE, Anderson, California, in violation of Section 15.25 of the Commission's rules." This involves interference from two PG&E high-voltage, "1920-vintage" power lines so severe that communications on the amateur 160-, 80- and 40-meter bands are impossible at all times and communications are impaired, and often disrupted on the 20-, 15- and 10-meter bands as well.

The ARRL states that PG&E wrote to one of the complainants on January 17,

1986, telling him that PG&E would take no action to alleviate the interference.

Some comments filed in the PR Docket 86-161 Proposal to expand privileges available to Novice operators object because the filer incorrectly believes it proposes a "no-code" Novice license while others object on the basis that it should have proposed a "no-code" Novice license! The comment deadline was 08/20/86.

"The ARRL has filed comments regarding the FCC proposal to impose radiation limits on radio frequency (RF) lighting devices operating below 30 MHz. RF lighting is a new technology in which RF energy is used to produce light, apparently more efficiently than existing light bulbs."

ARRL tests indicate that such bulbs with considerably lower interference levels than the maximum levels proposed by the Commission cause S1 to S7 interference levels using an indoor receiving antenna 3 feet from the RF bulb. "ARRL suggests that the Commission encourage the private sector to produce an adequate set of standards, and that the bulbs carry labels which would educate consumers about the potential of interference." (ARRL Letter, 08/15/86)

The two pilots of the around-the-world flight aircraft *Voyager* are Jeana Yeager, KB6LQR and Dick Rutan, KB6LQS, both Novice Class Amateur Radio operators. The aircraft is designed to be the first airplane to fly around the world nonstop and unrefueled. It was scheduled to begin the flight on September 14. No amateur operation was expected on that flight. (ARRL Letter, 08/04/86)

Currently operating on a budget of \$90 million, the FCC has tentatively decided to request \$104 million for fiscal 1988. Its request for \$96.4 million for fiscal 1987 is still pending in Congress. Contending that the FCC has essentially eliminated its current deficit, Chairman Mark Fowler directed that the freeze on promotions at the Commission be lifted July 20. (ARRL Letter, 08/04/86)

An Amateur Radio licensee has been charged with illegally operating a satellite uplink transmitter to intentionally interfere with the satellite cable television programming of Home Box Office, Inc. (HBO). The FCC determined that the April 27, 12:30 a.m. EST transmission was made by John R. MacDougall, KA4WJA. MacDougall identified himself only as "Captain Midnight".

Concluding that the interfering signal must have been transmitted from a professional satellite uplink facility with more than a certain antenna size and

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transmitter power, and using a recognizable specific make and model character generator, the FCC narrowed the possibilities to less than 12 licensed satellite uplink facilities. The Central Florida Teleport at Ocala, Florida, was the only facility, out of 580 surveyed, with the proper combination of equipment and availability for use at the time and date of the interference. MacDougall was the operator on duty!

In a plea bargaining agreement, MacDougall reportedly was fined \$5,000 and was asked to surrender his Technician Class license for the remainder of its term. (*ARRL Letter*, 08/04/86)

The Korean Ministry of Communications has advised the FCC that third-party communications from athletes and staff of the Asian countries at the 1986 Games would be permitted through Korean amateur stations 6K86AG and HL86A established by the cooperation of the Korean Amateur League in the main stadium and at the Village for lodging. The third-party arrangement is for the period of September 6 through October 8, 1986.

The Association of Radio Reading Services, which had earlier requested a piece of the 220-225 MHz amateur band for its transmissions, has now petitioned the FCC to require public FM broadcast stations to grant access to their subcarrier systems for their radio reading services. This is likely to "stunt the impact of the earlier petition..." according to the ARRL legal counsel.

The ARRL had filed comments in opposition to the petition for 220 MHz space. (*Westlink Report*, 08/22/86; *ARRL Letter*, 08/04/86)

"In yet another measure designed to conserve operating funds, the FCC will be delaying formal news releases on matters acted upon. Previously, press releases were issued within a day or so of its being made known. Once this change goes into effect, formal news releases could follow the release of a news item by 10 days or more. No implementation date has been announced." (*Westlink Report*, 08/22/86)

In defense of its ordinance which would prevent John Thernes, WM4T, from putting up a tower and amateur antenna system, the city of Lakeside Park, Kentucky has attacked the FCC's PRB-1. PRB-1 expresses the Commission's decision favorable to amateurs in regard to limited federal preemption of antenna-tower regulation.

In reporting on the Thernes case, the ARRL's General Counsel advised that the federal preemptive statement in PRB-1 provided the basis for the case being remanded to the District Court by the Court of Appeals. In regard to the

attack, the Counsel reported to the ARRL Executive Committee that this was to be expected, inasmuch as it is the only defense available to the city, and should not be a cause for undue alarm. (*Westlink Report* 08/08/86; *ARRL Executive Committee Minutes*, 08/23/86)

In General Docket 86-337, the FCC has proposed establishing an automatic transmitter identification system (ATIS) signal on all satellite video uplinks and asked for comments in a Notice of Inquiry on an ATIS system for all radio services and radio transmitters. "ATIS is a unique, unchangeable identifying number assigned to each transmitter at the time of manufacture, plus some correlation of the number to a data base identifying the licensee. This signature is automatically added to the unit's transmission and provides positive identification of each radiated signal."

In its Notice of Inquiry (released 08/19/86), the FCC asks many questions such as: "In what services would ATIS be beneficial? Should it be imposed on all services? Could ATIS be mandatory in some services and voluntary in others? ... Would it be feasible to permit stations to ignore normal call sign re-

quirements if those stations employed ATIS? Would this work in some services ... but not in others?" ... and so forth!

Comments are due by October 20, 1986, and the Commission noted in its inquiry it was willing to extend the comment period if requested. The ARRL Executive Committee has directed the ARRL Counsel to file comments opposing ATIS "... as inappropriate in the Amateur Radio Service." (*ARRL Letter*, 09/02/86)

"The ARRL will write the FCC to request information concerning the new FCC policy under which amateurs may be placed on 'reduced power hours' in cases where RFI has been reported. The letter will ask the Commission specifically about the regulatory foundation for the new policy." (*ARRL Letter*, 09/02/86)

END-OF-MONTH LICENSE TOTALS

June	1986	July
39,776	Extra	40,282
97,970	Advanced	98,240
116,606	General	116,884
84,985	Technician	85,820
78,942	Novice	78,967
418,279	Totals	420,193

Question pools to go to VECs

The FCC has released a Report and Order on Private Radio Docket 85-196, which turns maintenance of Amateur Radio volunteer examination question pools over to the VECs.

Since the inception of the all-volunteer testing program two years ago, it has remained the responsibility of the FCC to maintain and update the more than 1,600 questions in the pools. When this change is eventually implemented, any changes, additions and deletions will become the responsibility of the VECs.

If a change is made to the pool by a VEC, this information must be widely disseminated in its exact form so as to

meet the regulatory criteria that all questions be in the public domain as study material.

The effective date for this Rule change has not yet been announced.

— *Westlink Report*

RFI victory in S.F.

The Superior Court of California, county of San Francisco, California has ruled in favor of a radio amateur in an RFI case.

Mary Matheny, KB6CLL, was sued by a neighbor for allegedly causing RFI. The court ruled that the state court lacks authority to regulate and control Amateur Radio operators, radio emissions and radio frequency interference, and that maintenance of a state court action which would permit the state court to regulate and control Amateur Radio operation and radio frequency interference is prohibited by federal law.

The court stated "The Federal Communications Commission has the exclusive right and power to regulate, control and sanction Amateur Radio operations and radio frequency interference."

The court then granted KB6CLL's request for a summary judgment. This case will be an important reference for amateurs facing similar legal actions.

— *ARRL Letter*

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Space station

(continued from page 1)

that the Amateur Radio community could provide." added Dr. England. (Applause from the audience)

"This is too large a group for a question and answer period," Tony said, "so let me answer two questions I am most often asked." 1) What is it like up there? and 2) Did you experience any change in attitudes because of your space experience?

What it's like

On the fourth day, after working on my experiments full-time, I finally had time to look out of the window of the spacecraft. I spent two full trips around Earth, just looking at the Earth and space. At the furthest southern extent of our orbit, it was night with a full moon. The Earth was completely cloud-covered. The aurora was very active and formed a curtain all across the Southern Hemisphere. We could see the glow ahead of us, and it kind of flashed as we went through it. I could also see shooting stars entering the atmosphere below us. The stars overhead were all colors, not the white we see from here, but all shades of reds and blues. Of course, the sky was full of them — much, much fuller than you see them from here.

The future is in space

As to the change in attitude: yes, I did experience a change. As a scientist I now know this is true. As I watched the Earth from outer space, it clearly came to me that most of the world is out *there*, not down here. Up there, we were on the edge of it. I'm convinced that people will be out there some day. Our young people will see a lot of things we will never see. Our future is in space. □

Scratch paper

Ken Archbold, W6TMA

A good source for scratch paper often is obsoleted stationery. Find a local merchant who is moving and ask him for his old forms and stationery. I have been using stationery obtained in this manner for years now. What I do is take a small stack, end glue with rubber cement and make scratch pads. □

— *Gabilan ARC, CA*

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For certificate, please send QSL and 9" x 11" SASE to: A.C. Koch, KA8JN, 23682 Kim Dr., Mt. Clemens, MI 48043 □

Hines V.A. Hospital

In observance of Veterans Week, members of the Hamfesters Radio Club, Inc., Chicago will operate from the Hines V.A. Hospital's Robert K. "Pappy" Wade, K9CDH, Memorial Ham Shack using the Hines club call K9WFN from 1500Z to 0300Z (9 a.m. to 9 p.m. local time), November 9 (Sunday). The club will operate on 40 meters, 20 meters, 2 meters FM and 2 meters USB. Frequencies to be used are 14.260, 7.260, 146.43 simplex and 144.210 USB. Please send QSL, QSO number and a 9" x 12" SASE with 39¢ postage to: Hamfesters Radio Club, Inc., Chicago, c/o Robert K. "Pappy" Wade Memorial Ham Shack, Bldg. 8, Hines Veterans Administration Hospital, Hines, IL 60141.

Robert K. "Pappy" Wade, K9CDH, now a Silent Key, was a patient at Hines V.A. Hospital in the spinal cord ward where he spent 30 years. A World War II veteran, Pappy was instrumental in getting a ham shack set up at the hospital and most of the equipment was his own.

Pappy was a life member of Verdun Chapter 33 Disabled American Veterans, and on February 10, 1985, the Northern Illinois District of the Disabled American Veterans dedicated the Hines Ham Shack as a memorial to him. Hamfesters Radio Club has donated some of the newest radios and equipment, a 60-foot tower, antennas and a lot of good used equipment. Members of the club have given tests to patients and now nine of the patients in Hines spinal cord and extended care units have become Amateur Radio operators. Two therapists have also passed their tests and have their licenses.

The shack is available for use by all Hines patients who have a validated Amateur Radio license. — *George Gruenthaler, K9PBN* □

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VE exam schedules

Date	City	Contact person	Notes
California			
Nov 1	Burbank	(818) 842-1863	w/i OK
Nov 1	Van Nuys	(818) 762-5095	
Nov 8	Victorville	K6BET (619) 244-2025	
Nov 8	Vandenberg AFB	(805) 929-3710	
Nov 8	Palm Springs	(619) 347-4294	
Nov 8	Los Altos Hills	W6NLG (408) 255-9000	w/i only
Nov 8	San Marcos	(619) 465-EXAM	pre-reg by 10/29
Nov 9	Pleasant Hill	W6NLG (408) 255-9000	w/i only
Nov 15	Rancho Palos Verdes	(213) 374-7176	
Nov 15	Chula Vista	(619) 465-EXAM	pre-reg by 11/5
Nov 17	Eureka	KB6FIW (707) 442-9245	w/i OK
Nov 19	Sacramento	WA6RPB (916) 483-3293	pre-reg by 11/6;
			some w/i
Nov 22	El Cajon & Escondido	(619) 465-EXAM	pre-reg by 11/12
Colorado			
Nov 8	Denver	W0IJR (303) 366-9689	pre-reg pref
			w/i OK
Nov 14	Lakewood	W0IJR (303) 366-9689	pre-reg pref
			w/i OK
Florida			
Nov 8	Miami	WN4L (305) 247-2944	w/i
Nov 12	Jacksonville	W4PTT (904) 781-0972	w/i
Nov 15	Melbourne	WB9IVR (305) 724-6183	w/i OK
Indiana			
Nov 3	Plymouth	KB9V (219) 784-8540	pre-reg pref
			w/i OK
Nov 8	Fort Wayne	(219) 432-2110	10-day
			pre-reg
Nov 15	Porter County	W9ODM (219) 762-0580	
Nov 22	Columbus	K19R (812) 372-5006	15-day
			pre-reg
Nov 22	Evansville	KD9JB (812) 749-4404	30-day
			pre-reg
Nov 28	Mishawaka	Jerry Rohlender (219) 255-3089	
Dec 6	Indianapolis	KA9H (317) 241-1272	30-day
			pre-reg
Dec 8	Terre Haute	Norbert Polakowski (812) 466-1865	30-day
			pre-reg
Dec 13	Marion	N9DKB (317) 662-8621	30-day
			pre-reg
Dec 20	Michigan City	K9ET (219) 874-3386	30-day
			pre-reg
Nov 30	Kokomo	Will Puranen (317) 453-6542	

Date	City	Contact person	Notes
Kansas			
Nov 1	Parsons	NC0N (316) 421-8468	in advance
Massachusetts			
Nov 4	Acton	W1QLT (617) 263-8742	pre-reg by 10/28
Nov 19	Cambridge	WA2EYC (617) 646-1641	2-day
Nov 21	Holyoke	KO1R (203) 623-4850	pre-reg w/i
Dec 2	Acton	W1QLT (617) 263-8742	pre-reg by 11/25
Michigan			
Dec 4	Holland	ND8Q (616) 772-2816	30-day
			pre-reg
			some w/i
New Hampshire			
Nov 22	Dover	WA1PEL (603) 742-0130	pre-reg by 10/22
North Carolina			
Nov 2	Concord	WC4T (704) 596-2168	in advance
Ohio			
Nov 22	Mansfield	KA8UPR (419) 747-3875	30-day
			pre-reg
Nov 29	Canton	WB8VUN (216) 453-5896	30-day
			pre-reg
			some w/i
Nov 30	Elyria	AI8M (216) 324-4574	30-day
			pre-reg
			some w/i
Dec 6	Mentor	KO8O (216) 951-7985	30-day
			pre-reg
			some w/i
Dec 13	Maumee/Toledo	KU8B (419) 729-5245	30-day
			pre-reg
			some w/i
Vermont			
Dec 6	Windsor	WB1GXM (603) 543-1389	30-day
			pre-reg
			some w/i
Virginia			
Nov 29	Middletown	NC4B (703) 869-5241	30-day
			pre-reg
			some w/i
West Virginia			
Nov 8	Bluefield	WA4K (703) 326-2411	w/i only
Wisconsin			
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Callbook surprise

A central Missouri repeater trustee who recently purchased a new copy of the Callbook got quite a surprise. On getting the book, the first thing he did was to look up all of the users of his machine. Needless to say, he was more than a bit shocked when he noticed that one of his regular members was listed holding a Novice Class license. A check with the local FCC office confirmed this information. Even more shocking is the fact that this Novice had even been the president of another central Missouri repeater club. Because he was not caught by the FCC, all he suffered was an order to stay off 2 meters until he upgrades, but this came after five years of illegal operation.

— Westlink Report

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Youth Forum

(continued from page 3)

1) **Friendships.** When Jerry talked to a Soviet ham and told him that he was a police officer, the Soviet wanted to talk for hours on end. It turned out he was a KGB officer. One of Jerry's closest friends is Joe Rudi, NK7U, a professional baseball outfielder, who he met via Amateur Radio.

2) **Public Service.** Amateurs help others in disasters. Jerry once heard a distress call from a ship in trouble near Tahiti. It had hit a reef and was sinking. He called our Coast Guard with the in-

formation. The Coast Guard relayed it to the French Navy, who went to the rescue.

3) **Career Guidance.** Early on, Jerry was a member of RACES. While working at the sheriff's department as a high school age RACES volunteer, he was able to observe law enforcement activity first-hand. He liked what he saw. He picked his college program with the aim of getting into law enforcement.

"I got started in my career because of Amateur Radio, and I feel I have been able to progress in my career because of Amateur Radio," he said.

No matter what field you choose today, communications and electronics are

a large part of it. Insurance, banking, teaching, being a doctor — it doesn't matter what field. If you have the kind of background that Amateur Radio gives you, you will do well.

Tony England

When Tony was 13, he hung around an Amateur Radio store in old Fargo, South Dakota. Other hams hung around too, and he learned a lot of things from them. He got his license and bought an old receiver. The others helped him build a simple transmitter. "I was always building junk," he said, "and most of it didn't work. But I learned a lot in doing it."



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VHF		
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IC-27A FM Mobile 25w	429.00	Call \$
IC-27H FM Mobile 45w	459.00	Call \$
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IC-28H FM Mobile 45w	459.00	Call \$
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TS-830S Xcvr	1099.95	Call \$
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In his last year of high school, the physics teacher resigned. This was a small high school with 46 in the senior class. They substituted an English teacher, who didn't know much about physics, to teach the physics class. "I actually taught the class a lot," Tony said. "For a teenager to know more than the teacher, it was a lot of fun!"

When working for his doctorate at M.I.T., he spent some time in the Antarctic. He and the rest of his crew were 1,100 miles from the base camp at McMurdo Sound. They kept in touch with the base with an HF radio. Before he left the United States, he had the

foresight to get a crystal for the 20-meter amateur band. It was Christmastime, and under blizzard conditions living in two-man tents, they were able to talk back to the United States via Amateur Radio and have phone patches with their families.

Last summer, with the *Challenger* space flight, Tony and the others planned to share the experience of space flight with as many other people as possible. With amateur slow scan TV, they were able to send pictures down to Earth. And there was also a first for Amateur Radio. On this flight, pictures were sent up to the spacecraft for the

first time! The picture was that of Tony's wife.

Hands-on experience

The convention committee set up working amateur stations in the "Tiki Hut" outside the meeting hall. The group of young people was split into two. One group went to the Tiki Hut to observe Amateur Radio with some hands-on experience. The other half stayed and asked questions of the panel. Later, the two groups exchanged places.

CQ and SOS

Gordon West, WB6NOA, stole the show during the Q and A sessions by demonstrating a code learning experience. He displayed a key and code oscillator, and the beeps could be heard by all. He first demonstrated short beeps as opposed to long beeps. The audience had no trouble identifying which was which.

Then he said, "This is a distress signal, which was picked because of its unique sound," and he sent SOS. He did not tell them it was SOS, just let them hear the sound. Then he said, "Here is a call from an amateur meaning that he wants to talk to anyone." He sent the familiar CQ.

Then he asked the audience to distinguish the difference between SOS and CQ, and they were able to do it without fail. He awarded them all "As" for having passed their first code test.

Q and A

The questions seemed to be split between space questions and Amateur Radio questions. All the space questions were answered by Tony England.

Space Questions (excerpts)

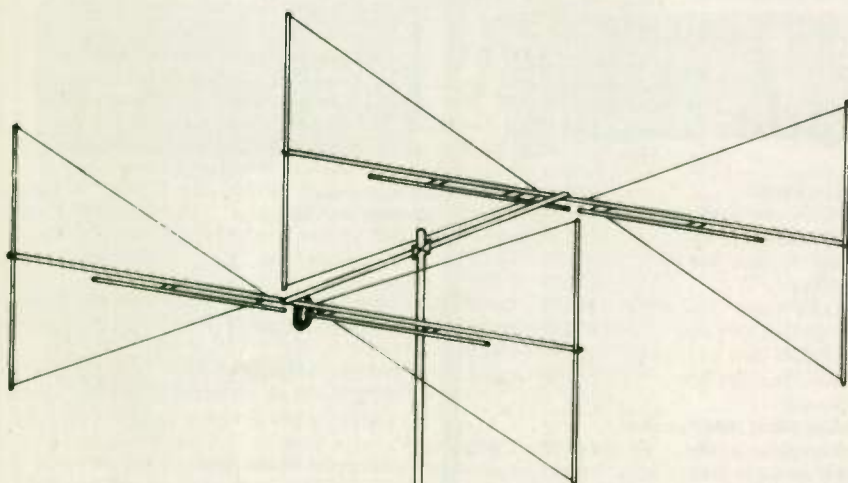
What's it like to be aboard the shuttle? It's like swimming, except the water is the air in the spacecraft. Weightlessness is novel for the first couple of days. After that, it becomes natural. You become acclimated to it and forget it. When you want to go somewhere, you just shove off and float over to it.

Here's a true story. An astronaut was home for the first night after a flight, sleeping in his own bed. He wanted to get up to go to the bathroom. He launched himself off the bed and landed on the floor. He *didn't* float to the bathroom!

Do you take a shower in space? The problem is that the water floats around. In Skylab they had a plastic bag, into which they climbed. They then sprayed water into the bag. The biggest effort was to keep from drowning. It didn't work very well. They hope to have a better model aboard the space station.

Say a person wants to become an astronaut. What are the odds of becoming one? "I encourage young people to do something they enjoy doing," Tony answered. Going into space is not a career, it is an event. If you choose a (please turn to page 18)

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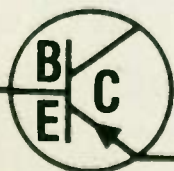


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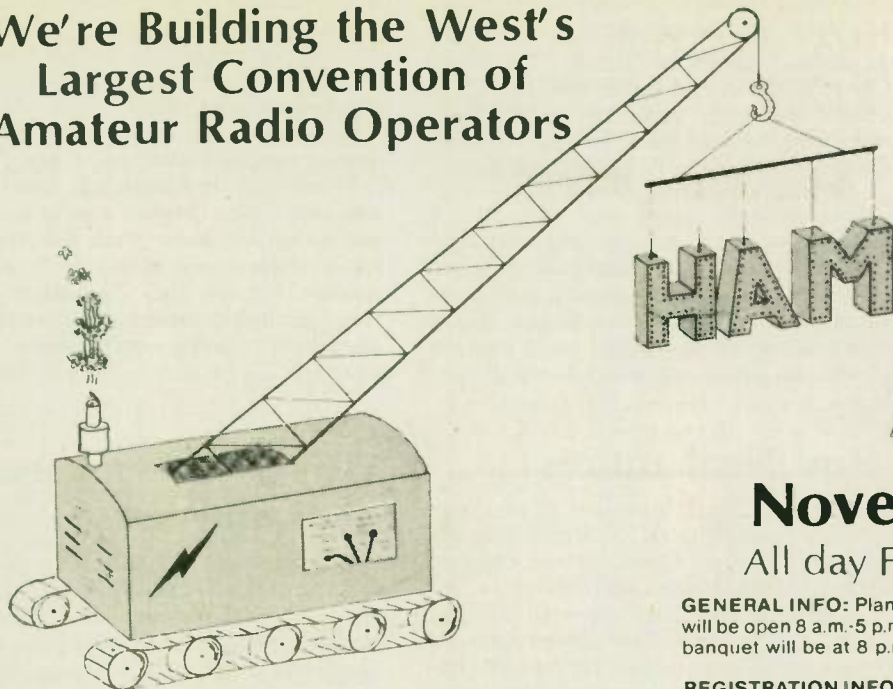
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November 7-8

All day Friday and Saturday

GENERAL INFO: Plan to travel on Thursday. Exhibits and forums will be open 8 a.m.-5 p.m. Friday and 8 a.m.-4 p.m. Saturday. Awards banquet will be at 8 p.m. Saturday.

REGISTRATION INFO: Every person taking part in the HAM/WEST activities must be registered. Advance registration is \$12 before October 24 (\$15 at the door) and includes prize tickets and admission to all HAM/WEST activities except the banquet. It is not necessary to be registered to purchase tickets for the Saturday evening awards banquet. Flea-market sellers must be registered; outdoor spaces measure 16'x20' (two parking spaces). Born in 1966 or later? Request complimentary "admission-only" tickets (no prizes) at the door. And — there's no fee for VEC exams taken at the convention!

HOTEL INFO: To guarantee your room, you must **make your room reservations directly with HAM/WEST**, either on this form or by phone (if charging to a credit card), and **make payment in full before October 1, 1986**. Reservations not paid by that time will be accommodated on a space-available basis only. Call HAM/WEST at 702-361-3331.

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Total amount \$ _____ Note: We will bill your credit card account in full when your registration form is received.



HAM/WEST, P.O. Box 19675, Las Vegas, NV 89132, 702-361-3331

Youth Forum

(continued from page 16)

career that has application in space, you have a better chance. Examples: military pilot or test pilot; medical doctor specializing in space medicine; crystal scientist (growing crystals in space). It would be a big mistake to choose your career to put yourself in a position for an event.

Were you scared when you first joined NASA? Everybody who decides to fly has to make a decision that is worth whatever risk there is. We don't go into it because it's risky. We're not daredevils. NASA doesn't want that kind of people in the program. They don't want vehicles to fail. They want people in the program who have a strong interest that nothing should fail. Whenever you do something new, there's a risk. But you have the excitement of learning something nobody's every known before. I think you'll find that excitement is worth the risk.

Amateur Radio questions (excerpts)

Several questions centered on the cost of setting up an Amateur Radio station. The panelists made it clear that you don't have to have the latest gear advertised in the magazines. People with a lot of money are the ones to buy that expensive stuff; then they sell their old equipment to others. This is the gear to go after. You'll find it at flea markets, or better yet, from another amateur radio directly.

Another concern was antennas. Can they be put up near airports? What if the landlord won't allow antennas? There are FCC rules as to antenna heights in proximity to airports. But they can't keep you from having an antenna. As to restrictive leases and the like, the panelists agreed that "no

antennas" meant "no antennas that can be seen" or "no antennas that can be found." You don't really need much of an antenna to enjoy Amateur Radio. It depends on what frequencies you want to operate on. You can use a modest antenna and talk around the world.

One panelist used #30 magnet wire, thumbtacked around the wall in an apartment with good results. Another had a 40-meter wire beam hidden in five oak trees in the yard behind his apartment. Unfortunately, hurricane Alicia blew his trees down, and he is now on 2-meters. There are many ways to con-

ceal antennas — they become part of a challenge. One amateur suddenly became very patriotic and flew the flag every day. He soon got a beautiful metal flagpole in his front yard, which of course was a vertical antenna, fed with buried coaxial cable.

When you fly again, will you talk to the kids? Yes. We don't have a plan in place. As you know from the papers, a lot of science missions have been cancelled. If I do fly, I'd like to have Amateur Radio aboard. I'd like to do the same kind of thing we did before. When we start, I'll be sure to let you know.

Roy Neal retires

The 1986 Radio Amateur of the Year — Roy Neal, K6DUE — retired from his position as West Coast Bureau Chief of NBC Network News on October 1.

Although he will remain with NBC on a consulting basis, Neal plans to devote much of his time to making personal appearances and lecturing on the space program and allied topics.

In addition, he plans to be involved in various television projects through his own company "Talent Connections." Included will be at least one new production on his favorite subject: Amateur Radio. (See 'Who's Who', Worldradio November 1981.)

— Westlink Report

Wayne Green speaks at Ham/West

73 Magazine Publisher Wayne Green, W2NSD, will be the keynote speaker at the 1986 Ham/West Awards Banquet on Saturday evening, November 8, at the Hacienda Hotel in Las Vegas, Nevada.

Advance registration is \$12 for the convention and an optional \$20 per person for the banquet. Flea market spaces are \$20 each. Make your checks payable to Ham/West, P.O. Box 19675, Las Vegas, Nevada 89132. You may call (702) 361-3331 for additional information.

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Automatic threshold correction and sharp multipole active filters give good copy under severe QRM, weak signal and selective fading.

There's an FM (limiting) mode for easy trouble-free tuning that's best for general use and an AM (non-limiting) mode that gives superior performance under weak signals and heavy QRM.

A handy Normal/Reverse switch eliminates retuning while checking for inverted RTTY.

An extra sharp 800 Hz CW filter really separates the signals for excellent copy.

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Now you can quickly optimize your antenna for peak performance with this portable, totally self-contained antenna bridge that you can take to your antenna site—no other equipment is needed.

You can determine if your antenna is too long or too short, measure its resonant frequency and antenna resistance to 500 ohms. It's the easiest and most convenient way to determine antenna performance available today to anyone. There's nothing else like it and only MFJ has it. Built-in resistance bridge, null meter and tunable oscillator-driver (1.0-30 MHz). Uses 9 V battery. 4 x 2 x 2 inches.



REMOTE ACTIVE ANTENNA

The authoritative "World Radio TV Handbook" rates the MFJ-1024 as "a first-rate easy-to-operate active antenna ... Quiet, with excellent dynamic range and good gain ... Very low noise factor ... Broad frequency coverage ... the MFJ-1024 is an excellent choice in an active antenna"

54 inch remote active antenna mounts outdoor away from electrical noise for maximum signal and minimum noise pickup. Often outperforms long-wire hundreds of feet long. Mount anywhere—atop houses, buildings, balconies, apartments, ships.

Use with any radio to receive strong clear signals from all over the world. 50 KHz to 30 MHz. High dynamic range eliminates intermodulation. Inside control unit has 20 dB attenuator, gain control.

Switch 2 receivers and auxiliary or active antenna. "On" LED. 6 x 2 x 5 in. 50 ft. coax. 12 VDC or 110 VAC with MFJ-1312, \$9.95.



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200 WATT VERSA TUNER MFJ-901B \$59.95

MFJ's smallest 200 watt Versa Tuner

matches coax, random wires and balanced lines from 1.8 thru 30 MHz. Works with all solid state and tube rigs. Very popular for use between transceiver and final amplifier. Efficient air-wound inductor gives more watts out. 4:1 balun 5x2x6 in.



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Code matters

Part II

Loraine McCarthy, N6C10

Last month we reviewed some general topics that may assist you in obtaining a passing score on your code exam. Over the next few months, in addition to discussing general ideas, I will also discuss more specific "word techniques" and "sentence techniques."

This month, let's be more specific and discuss the first of the "word techniques" that I review with students. *Most important to remember is that none of these techniques are a substitute for our good ability to copy the code! I find that these topics assist students in realizing how to get the most out of their copy.* When students realize they can work with their code copy, they tend to relax and feel more confident. As a result, the speed building process becomes easier.

Certain letters and numbers that are very close in code sound are often exchanged when writing down code. This means you have a letter where a number belongs or a number where a letter belongs. These errors often occur due to nervousness; we simply hear one "dit" or one "dah" less or more than was sent.

Nearly all students tend to make some of these errors.

There are four most common sets of letters and numbers that we mix. The first is the letter "H" and the number "5". A few of these different types of errors tend to make code copy unreadable unless we learn how to deal with them. Consider that a word would seldom have a number in it. If you have copied "5arry" and the test asks you the operator's name, it is not necessary to miss that question. If you recognize that the "H" was a mistaken "5" and make the correction, you can arrive at the correct name of Harry. A common situation where this occurs is in RST reports. Frequently on students papers, I see copy such as "H79" or "H99". We know that the RST report requires three numbers. By substituting a "5" for readability where the "H" is, we arrive at RST reports of 579 and 599. This will nearly always work out correctly if we analyze the copy.

The second set is the letter "B" and the number "6". This sometimes occurs in call signs. Correcting this can be difficult as it requires you to know something about the structure of call signs. Correct position of the number in the call sign is important. Let's look at some different examples.

All letter and number switches can occur in temperatures, ages, power re-

ports, etc. For instance, if you have copied "2B years old", you have not really missed the age. The "B" is there for a reason, it represents a character that you heard in code. Your ear missed the final "dit" sound at the end of the "6". Correct the "B" to a "6" and you will have "26 years old". If you copy "my name is 6ill", you would change the "6" to a "B" and arrive at the name Bill.

The third common set are the "J" and the number "1". If you've copied "1ohn", it is the name "John". If the temperature is "4J" degrees, it is "41" degrees.

WORD TECHNIQUES

LETTERS AND NUMBERS

Certain letters and numbers that are very close in code sound are often exchanged when writing down code. Correct translation in these situations will nearly always produce a correct answer.

Here are the 4 most common. MEMORIZE THESE.

H ●●●●	5 ●●●●●	Sarry	Harry	H79	579
B ●●●●	6 ●●●●●	2B years old			26 years old
J ●●●●	1 ●●●●●	1ohn	John	4J	41
V ●●●●	4 ●●●●●	Ste4e	Steve		

* The rule that applies to all other letters and numbers is as follows:

You see responds to what it hears first; that is the first pattern of dits or dahs.

Here are some common examples:

2--●●● to 7--●●● RST 529 to RST 579

0--●●● to 7--●●● Age is 20 to Age is 27

U●●● to 7●●●--7U degrees to 72 degrees

REMEMBER: You must work within the context of the sentence. There are times when you cannot translate. Example, Drake 2B (A receiver and model number) Unless you know something is incorrect you keep your original copy. Drake 2B is correct.

I have seen many situations where this has occurred twice as part of an answer. Suppose you have copied "I am HJ years old". Remember that "HJ" has a meaning. If you correct this to "51" your answer will probably be correct.

Let's look at the fourth of the more common letter and number combinations. These are "V" and the number "4". What name is "Ste4e"? Of course,

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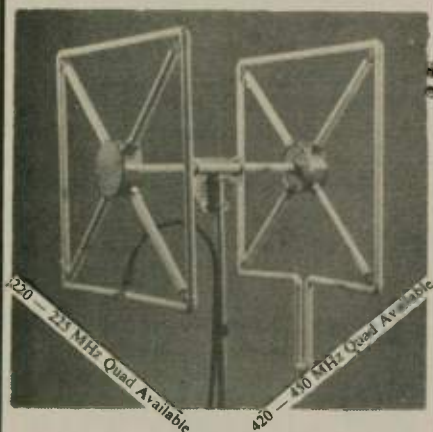


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it is Steve. How old is a person who is "6V" years old? He is 64. Some students tell me they confuse the letter "V" with the number "3", but this is not nearly as common as the "4".

Now that we have reviewed the four most common of the letter and number pairs, you may be wondering how to handle the remainder of the alphabet and numbers. The rule to remember is that "your ear responds to what it hears first; that is, the first pattern of dit or dah sounds". A common example would be the letter "Z". It begins with two dah sounds. What number begins with two dahs? It is the number "7". So, if you copy an RST report of "5Z9" you would correct it to "579". What would you do if you found you had copied the letter Q where a number should be? It would also be a "7" because both begin with two dah sounds.

Now how about the letter "U"? The

first pattern of dits or dahs is two dit sounds. This would then convert to the number "2". How about a "W"? This would be a "1". It does not matter what follows the first pattern of dits or dahs. If you are nervous at the test, your ear will respond to that first pattern.

The following is a handout that I use when teaching the code portion of our classes. Review this carefully and begin to check your copy for these types of errors.

Always check your work after you have copied a few minutes of the code! Remember to use a colored pen or pencil, and if you have an error or omission, write the correct answer above that spot in your copy. Never write on top of your original copy as you will lose the ability to analyze your copy. Once you begin to recognize letter and number errors, they will become easier to correct as you practice.

Satellite software package

A brand new software package is now available for the Commodore-64. The exciting new features in Supertrak 64 include a highly detailed map display, ground track path, tracking up to eight of 14 satellites in the menu, and autocall of the QUICKTRAK tabular program.

Bob McGwier, N4HY, the designer of

Supertrak 64, says that some special software hooks are built into the package so it will run the soon-to-be available autotracking system from Encomm.

The Supertrak package is now available at the AMSAT Software Exchange, P.O. Box 27, Washington, D.C. 20044.
— ARRL Letter

AMSAT Phase 3C launch delayed

The launch failure of a European Space Agency Ariane-2 rocket on May 30 will delay the launch of AMSAT's Phase 3C until 1987.

A third stage failure is being blamed for the fourth Ariane failure in 18 launches. Arianespace immediately suspended all plans for future launches pending investigation of the failure.

AMSAT is manifested to fly on the first Ariane-4 launch. This launch had been scheduled for early November. Arianespace officials said it would now be at least two months and up to six months or more before launches could resume.

— ARRL Letter

Idea-hunting

Don Chappell, W2AZD

Where do ideas come from when you embark on some construction project? Certainly from books and magazines and fellow hams. Sometimes the idea is your own. However, quite often, the exact parts are not available. Then what do you do?

If I am looking for inspiration, one of the places I start is looking through the shoe boxes (see Ham Hints, TIBMARC Sparks, September 1983) of parts. Very often I'll come across something that will give me an idea of how to go about whatever it is I am trying to make.

Another good place to look is your local hardware store. If you're trying to fix or build something and don't know just how to go about it, slowly walk up and down the aisles of the hardware store. Don't neglect the kitchen department... there are some real jewels there.

It is amazing how often the solution comes to mind when you see some object that will do the job.

— Tucson ARC, AZ



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Still available is the package of 10 helpful handouts on the code, which includes two pages of written review exercises on the topics I discuss. You may obtain this for \$3 to cover printing, postage and handling.

To order any of the above items, you may write to me direct: Loraine McCarthy, N6CIO, 315½ Ruby, Balboa Island, CA 92662.

See you next month for additional hints on the code, as well as a discussion of the next word technique, which I call "Basic Reversals."

Ode To An Orbiting Spacecraft

*Twinkle, Twinkle, Satellite,
Signals pulsing thru the night,
If some fool hits button "D"
Kindly do not fall on me!*

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CaGen SCRATCH PAD

The CaGen Scratch Pad is a general utility (machine language) program which will prove useful to all C-64 owners, with special value to programmers — for screen design and plotting. Users can store and retrieve information such as program documentation, schedules, shopping lists, recipes, appointments, etc. Use as an "electronic notebook". Programmers can eliminate costly printing bills for instruction manuals by creating documentation files on the actual program disks for user printing or viewing on screen. A very handy tool. \$45



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The CaGen Display program is a variation of "Scratch Pad" which produces continuous information displays on a monitor for advertising, public information, or any general informational purpose. Any screen that can be created with the C-64 keyboard (text and/or graphics) will be displayed. Perfect for point-of-sale advertising, club displays and the like. Use it anywhere you need an "electronic bulletin board". Has all the features of "Scratch Pad" except for special files such as documentation described above. It produces up to 19 continuous screens with variable display times for each screen. \$45



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**CaGen DISK-KIT 128
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The CaGen DISK-KIT 128 is a machine language sector editor for the new C-128 & 1571 disk drive. Useful for all C-128 owners and programmers. It will read and write to all sectors on both sides of a 1571 GCR Formatted disk. It will not handle MFM format. Placed in the public domain as a courtesy of CaGen Software.

We will be happy to provide either the Custom Catalog or the Disk-Kit 128 for a charge of \$4.00 per program to cover the costs of disk, production and mailing to any U.S.A. or Canada address.



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AWARDS

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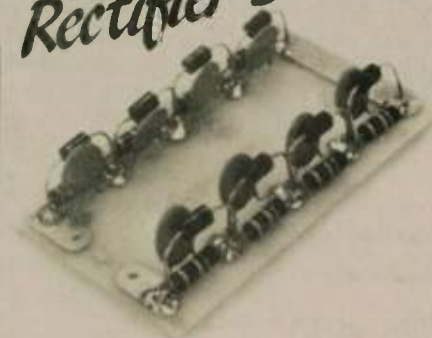
John W. Gore Memorial Scholarship — \$900: James H. Baker, KI4YN, Alexandria, VA

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QCWA Memorial Scholarships — \$600 each: Michael Kazigian, KA2MRK, Park Ridge, NJ; Leslie Ann Redman, KA9PCV, Highland Par, IL; Michael I. Silverglate, KR9Q, Sheboygan, WI; David J. Swiatlowski, KA2KLM, Camillus, NY; Diane E. Willemin, KE8DJ, Elyria, OH; Tony C. Wood, Jr., KB4DNE, Tuscumbia, AL

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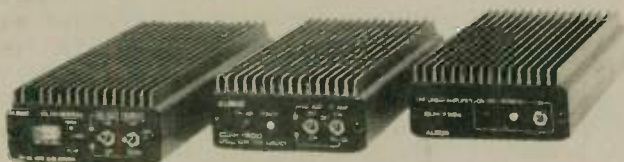
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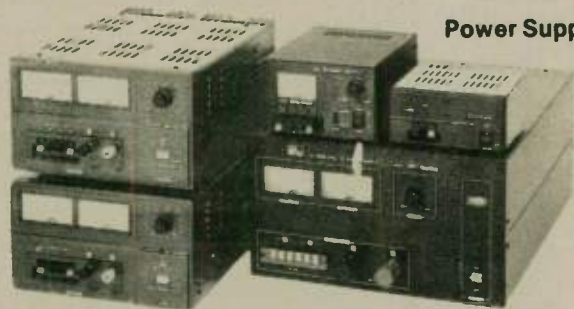
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Everett L. Gracey
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Tragedy brings hams together

We in the northwestern part of Orange County (California) have experienced our worst fears in that a mid-air plane collision rained death and destruction on our community. Progress decrees that we must have airports to provide rapid transportation to keep up with the pace of the world. Thus it is inevitable that sooner or later, accidents like the one that occurred August 31st will occur. Whether the fault lies with one or more individuals, be it human or mechanical failure, the fact is that it did happen. What's more, it will happen again some day in the future. Like earthquakes, they can be predicted, but not the exact time and place.

We can, however, be thankful that our emergency services are able to respond to these tragic incidents and provide the necessary help in dousing fires, helping

the injured and controlling the panic. Our police and fire departments are to be commended. The Red Cross and other welfare groups, the private sector like GTE and others, are also to be thanked for extending their facilities to the injured and temporarily homeless victims. I overheard the Gateway Plaza Holiday Inn in La Mirada, offer to house some of the victims whose homes were gutted. Yes, the neighborhood really went to bat when the odds were so against them.

However, I was disappointed that so little credit was given to the Amateur Radio operators (hams) who responded within minutes of this crash. In less than 15 minutes, ham operators were assembled, the Red Cross was given the use of the repeater owned by the Western Amateur Radio Association and over 100 hams were on duty. Hams maintained communications between the Red Cross and police and fire departments. They saw that food was ordered for the workers at the site of the tragedy. They assisted in crowd control, helped pass messages from victims and in general, responded to the wishes and needs of the paid services.

Few members of the public are aware of the ARES (Amateur Radio Emergency Service) and the fact that the Red Cross utilizes ham operators and ham equipment to establish and maintain vital communications networks. These are not CBers, but individuals who have studied and passed an FCC examination and earned the right to purchase and use Amateur Radio frequency equipment.

These devoted individuals donate their time, equipment and facilities to help their fellow man. No remuneration is accepted or permitted. Many spent eight hours or more at the site of the tragedy, before being relieved. Others were at Red Cross control centers and other designated locations to assist in routing of necessary supplies. Their actions were not only required, but were a real necessity. The Western Amateur Radio Association (WARA) is based in Cerritos, and many of its members are

residents of this community. They had a personal interest in helping their town. Those located adjacent to Cerritos felt just as close. It could be our town next time.

The Long Beach and Downey Radio Clubs are also to be thanked for their assistance. In catastrophes like this, it is nice to know that county and city lines are ignored and a mutual aid and assistance program exists.

IRV LANS, KA6SOP
Board of Directors, WARA
La Mirada, California

Could fancier licenses raise renewal rate?

I would like to make a comment on your "Mini-Editorial," September issue of *Worldradio* (page 3). The topic is why are we not retaining Amateur Radio operators after they receive their initial licenses.

After a new candidate has studied hard and taken a Morse code test, and if he passes it, he waits to receive his credentials. And what does he receive from the FCC to acknowledge that he is licensed? A very insignificant-looking piece of cheap paper certificate for all of his hard efforts. Not much to show a newcomer what his or her credentials will look like.

This is discouraging and could cause one to lose interest in renewing. I am sure we all would be most happy to pay a fee of \$20 for 10 years to receive something that is permanent and attractive to display. In my opinion, this is a good part of the problem of dropouts that take place.

JERRY PRUS, N2CNE
Scarsdale, New York

Hams need to 'shape up'

In response to your "Mini-Editorial," September 1986 issue (page 3), may I express a few thoughts?

Appliance Operators. Yes, I'm afraid we have all become Appliance Operators. A few of us may build and operate QRP rigs, but in our shacks we all use professionally built transceivers, now all foreign-made. How many of us do trouble shooting and repair when the time comes to fix an ailing rig?

Let's take the matter of age. We are all growing older and the average age of the ham has advanced far beyond what it should be. Too many are a bunch of old Lids who hold onto frequencies as if they were their own. And from the sound of us, I wonder how many could pass the General license test if we took it today.

(Please turn to page 26)

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Or This Inexpensive It Really Shouldn't Be This Easy

Remember just a few years ago, how it took a roomful of equipment just to work RTTY. And if you wanted more than one mode it took a dedicated computer system costing thousands of dollars. The new AEA Pakratts are proving it doesn't take lots of equipment or money to enjoy working all bands in five different modes.

First, A Good Idea

The idea behind the Pakratt is very simple. One controller that does Morse, Baudot, ASCII, AMTOR, and Packet, and works both HF and VHF bands. Of course the decoding, protocol, and signal processing software must be included in the unit, and connection to the computer and transceiver have to be easy. The unit also has to be small and require only 12 volts, so it will work both in the shack and on the road.

Second, Computer Compatible

It doesn't matter what kind of computer you have, we have a Pakratt for you. The PK-64 works with the popular Commodore 64 or 128, and the PK-232 works with any other computer or terminal that has an RS-232 serial port. The PK-64 doesn't require any additional programs. Simply connect to the computer and transceiver and you're on the air. The PK-232 needs a terminal or modem program for your computer. The one you're using with your telephone modem will work just fine.

Fourth, AEA Quality and Price

Not many manufacturers like to discuss quality and price at the same time. AEA thinks you want high quality and low price in any product you buy, so that's what you get with the Pakratts. Ask any friend who owns AEA gear about our quality. The people who buy our products are our best salespeople. As for price, the PK-64 costs \$219.95, or \$319.95 with the HF option. The PK-64A, an enhanced software unit with a longer flexible computer cable, costs \$269.95 or \$369.95 with the HF option. The PK-232 costs \$319.95 with the HF modem included. All prices are Amateur Net and available from your favorite amateur radio dealer. For more information contact your local dealer or AEA.

Prices and specifications subject to change without notice or obligation.

PAKRATT™ Model PK-64



PAKRATT™ Model PK-232

Third, Performance and Features

The real measure of any data controller is what kind of on-air performance it gives. While the PK-64 and PK-232 use different types of modems, both give excellent performance on VHF. The optional HF modem of the PK-64 uses independent four-pole Chebyshev filters for both Mark and Space tones, and A.M. detection. The HF option can be factory or field installed.

The PK-232 uses an eight-pole bandpass filter followed by a limiter discriminator with automatic threshold correction. The internal modem automatically selects the filter parameters, CW Fc = 800 Hz, BW = 200 Hz; HF Fc = 2210 Hz, BW = 450 Hz; VHF Fc = 1700 Hz, BW = 2600 Hz.

The PK-64 uses on screen indicators to show status, mode, and DCD (Data Carrier Detect) while the PK-232 uses front panel indicators. Both units use discriminator style tuning for HF operation. And that's just the tip of the iceberg. Features like multiple connects on packet, hardware HDLC, CW speed tracking, and other standard AEA software features are included in both the PK-64 and PK-232.

AEA

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Off the Air

(continued from page 24)

We have another bad habit — ever noticed how we all crowd the bottom of the bands? On weekends the pile-ups between 14.175 and 14.275 are impossible, yet it's usually clear from '275 to '350, or when 10 meters is open. Have you ever called CQ between 28.300 and 28.500? No one will answer your call.

We as a group are lucky to have five monthly magazines and numerous bulletins, yet when was the last time you purchased one at a newsstand? Here is an excellent place to get new people interested in Amateur Radio.

Finally, support a club that has a teaching program. Put a note in your local paper — you'll get new recruits.

We are a dying group and we had better do something about it. There are hungry organizations looking at our fre-

quencies, and we will be the losers if we don't shape up.

ARNOLD J. MEYER, KD6DB
Van Nuys, California

'Me'? No, 'U'

I've recently reactivated a modest home computer capability in my "shack". My motivation was the frequent visits from two harmonics of one of my harmonics — Sean, 4 1/2, and Casey, 3.

While I have some professionally prepared pre-school learning programs, I'm pleased to report that both boys take great delight in playing with a program I got from Sam Moore, AC5D, called "Kids CW With Speech." You strike any key, the speech synthesizer announces the entry, the character appears in large block letters on the screen,

and the Morse code sounds from the tone generator.

Sean takes this all in stride and enjoys "making" the letters and numbers on the screen. It's the younger one I have a problem with. I say, "Casey want to make an 'M'?" He nods. I point to the key. He says, "M", depresses the key, looks at the screen to see the letter M appear, hears the speech synthesizer pronounce "M", looks up at me with a smile and says, "He say 'M'." It works every time and we can do it 50 to 100 times in one sitting.

So what's the problem? Well, it's with just one letter. I say, "Casey want to make a 'U'?" He nods, depresses the key I'm pointing to, but he says, "me"! And I can't figure out how to explain the difference between "U" and "me" to a 3-year-old!

BRUCE EGGERS, WA9NEW
Raleigh, North Carolina

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Alta Dunlap, KB6CGP

Creative ham enjoys the hobby

Hi, and thanks for a great magazine. I cut my radio teeth on it. I'm almost 67 and received my Novice in September 1983, my Technician in November 1984, and my General in 1985. No classes — just books, a recorder with tapes and a lot of encouragement from my ham sons and ham friends.

Since Halloween is coming, I thought you might like to see the mask I made to wear to a West-McCarthy class in the Marina last fall. As a General, I was allowed to sit in on the class and thoroughly enjoyed it. Since a class fell on Halloween, I wore the mask. I used the push bell button in my hand to send red code from the radio shack taped on top of the "grocery bags."

I work four days per week at Pepperdine University, but find time to use my radio and it's a real pleasure. I've reached west to Hawaii, north to North Pole, Alaska, east to New Jersey and other eastern states, and as far south as



Halloween mask, Amateur Radio-style

Guatemala. AND the bands are getting better.

I am a member of the Simi Settlers ARC in Simi Valley and a member of the active RACES group in Malibu. We turn out for mud slides, high tides, fires, 10-K runs and marathons, plus special events like "Hands Across America." We had Malibu's first Field Day on the "MASH" site and worked it on solar power.

Yours was the first magazine on radio that I could understand, so I kept reading and it surely helped me to receive my license. I read it and others now. I still don't understand many things, but I read a lot and each month I gain some knowledge to store away.

(P.S. The patches I made with ma-

chine embroidery for my Simi Valley friends. One — Sy Botan, K6PWP — saw me through my Novice license and gave me my tests. All three — Dick Hoolihan, W6AFF, Bob Yonce, N6FFU, and Sy drove 50 miles to Malibu to install my Kenwood 430 and Butternut HF6V.)
ALTA DUNLAP, KB6CGP
Malibu, California

More enthusiasm for serving the public

It was really too hot for the 100-mile drive up Mt. Palomar and home again, just to check the emergency batteries at the Palomar ARC repeater station. Way too hot — my old car labored up the grades in the stink of overheated engine oil — just to be sure Amateur Radio would be there should the need arise.

As a federally licensed service, that's part of our job. But we don't get paid for it; in fact the law says we *can't* be paid for it. And on a day of baking heat, with your car gasping out its last miles, you sometimes wonder if it's worth it. The public who we've sworn to serve hardly knows we exist.

Atop the mountain I did my chores, sweating in the muggy confines of the repeater shack, manhandling the 200 lb. batteries about, checking the electrolyte and connectors; the batteries use more water during hot weather. The batteries and everything else, even the shack, were built or bought by other hams — not a dime of public money. Yet all is dedicated to public service in time of need.

Going down the mountain I met a part of that public. Coming up the hill. Going like the dickens. On a bicycle. He had a wild halo of hair and a bushy beard that

streamed back in his wake as he pedaled madly past another pair of bikers. He gave me a fierce grin of proud satisfaction as he shot past them — and me — and vanished around a curve.

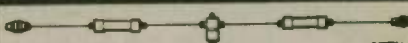
He only had one leg. Had his foot strapped to the pedal somehow, just a blur of circular motion as he gave me that huge toothy grin amidst that thicket of a beard and vanished. Part of the anonymous public I've promised to help in time of need.

He sure didn't need much help right then, zipping past his two-legged competitors like he was doing the Tour de France. Uphill. I guess I'd be willing to give him a hand during an emergency. In fact, I guess voluntary public service isn't quite the burden it might appear, not when the public embodies spirits like that one-legged bicyclist.

It was still awfully hot driving home, and the old car stank just as bad, but the trip was somehow shorter this time.

ROBERT HOOVER, KA6HZF
Vista, California

MULTI BAND TRAP ANTENNAS



TRAP DIPOLES:

Model	Bands	Traps	Length	Price
D-42	10/15/20/40	2	55'	\$59.95
D-52	10/15/20/40/80	2	105'	\$49.95
D-76	10/15/20/40/80	6	82'	109.95
D-86	10/15/20/40/80/160	6	163'	129.95

TRAP VERTICALS - "SLOPERS":

Model	Bands	Traps	Length	Price
VS-41	10/15/20/40	1	28'	44.95
VS-52	10/15/20/40/80	2	49'	58.95
VS-53	10/15/20/40/80	3	42'	69.95
VS-54	10/15/20/40/80/160	4	73'	89.95

*Can be used without traps. *Feed line can be buried if desired. *Permanent or Portable Use

ALL TRAP ANTENNAS are Ready to use - Factory assembled - Commercial Quality - Handle full power - Comes complete with - Deluxe Traps, Deluxe center connector, 14 ga Stranded CopperWeld ant. wire and End Insulators, Automatic Band Switching - Tuner usually never required - For all Transmitters, Receivers & Transceivers - For all class amateurs - One feedline works all bands - Instructions included - 10 day money back guarantee!

SINGLE BAND DIPOLES (Kit form):

Model	Bands	Length	Price
D-16	15	22'	18.95
D-26	20	33'	19.95
D-46	40	56'	22.95
D-66	80/75	130'	25.95
D-180	180	360'	34.95

Includes assembly instructions. Deluxe center connector, 14 ga Stranded CopperWeld Antenna wire and End insulators

COAX CABLE: (includes PL-259 connector on each end)

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RG 58	50'	\$6.00	\$11.95
RG 58	90'	12.00	16.95

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way to meet all kinds of new people from all over the world." Dean has cerebral palsy and got started in Amateur Radio with help from the Courage HANDI-HAM System. The HANDI-HAM System is an international organization of able-bodied and disabled hams who help people with physical disabilities expand their world through Amateur Radio. The System matches students with one-to-one helpers, provides instruction material and support, and loans radio equipment. Isn't it time you got radioACTIVE with the Courage HANDI-HAM System?



Call or write the Courage HANDI-HAM System W0ZSW at Courage Center, 3915 Golden Valley Road, Golden Valley, Minnesota 55422, phone (612) 588-0811.



N7BES

STATION APPEARANCE

Brian Nielson, N7BES, of Ritzville, Washington has won our November Station Appearance with this impressive set-up. In the large picture is Brian's station — console is homemade; the small one shows his antennas.

A description of the equipment follows (left to right): Kenwood HC-10 computer clock; AEA CP-1 Interface C-64 Computer and Axiom printer with a 9" monitor (for RTTY); Kenwood TR-9130 all-mode rig and Kenwood TR-7950 FM transceiver with a Tokyo Hy-Power HL-160-V-25 2-meter amplifier, (VHF); Kenwood TS-940S with a pair of SP-940 speakers and SM-220 station monitor with Kenwood TL-922 amplifier (HF). All gear is controlled by a homemade switch panel and both towers are controlled by two separate antenna switching systems.

Tower #1 is a 100-foot Rohn with a 6-element KLM monoband 20M Yagi turned with the heavy-duty Hy-Gain HDR-300 rotor and pro-search computerized control box. Also mounted atop tower #1 is a 13-element KLM horizontal 2-meter antenna. A vertical 2M isopole caps off the first tower atop a 6-element KLM KT-34XA tri-bander at 80 feet.

Above the tri-bander is mounted a 40M rotatable dipole by KLM. This an-



tenna is mounted parallel to the tri-band beam and located at 90 feet. Two 160/80M slopers take care of the "low bands." The tri-bander and 40M rotatable dipole are turned by the Hy-Gain TailTwister rotor. The 20M antenna is the KLM 20M-6 "Big Sticker" monobander which is 6-elements mounted on a 60-foot boom.

Brian has received several awards, including DXCC, WAZ, WAS, WAC and 10-X. Now he can add Station Appearance to the list — and a year's free subscription. □



10-meter beacons

The IARU announced in its Resolution 85-1, a plan to form a network of 10-meter beacons, similar to the present beacon system in place on 14.1 MHz. The new system would operate on 28.2 MHz, and each of the stations would

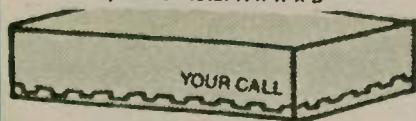
broadcast its call sign in time sequence with four power levels in 6dB steps. With the return (someday?) of the higher frequency bands as we near the end of the sunspot cycle (only 11 months to go!), it is hoped this network will help alert amateurs worldwide to band openings on both 10 and 12 meters. □

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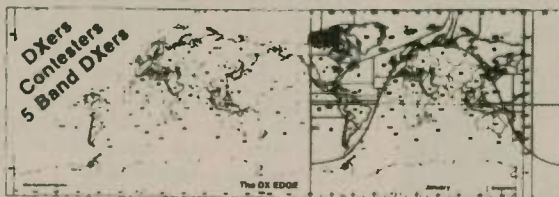
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A standard 50 Ohm SO-239 connector is recessed within the base sleeve (fully weather protected). With the IsoPole you will not experience aggravating deviation in SWR with changes in weather. The impedance matching network is weather sealed and designed for maximum legal power. The aerodynamic cones are the only appreciable wind load and are attached directly to the support (a standard TV mast which is not supplied).



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The Hot Rod antenna can be expected to make the same improvement to hand-held communications that the IsoPole antennas have made to base station operation. **Achieve 1 or 2 db gain** over ANY 5/8 wave two meter telescopic antenna. The factory tuned HR-1 is **20% shorter, lighter and places far less stress** on your hand-held connector and case. It will easily handle over 25 watts of power, making it an excellent emergency base or mobile antenna. In the collapsed position, the Hot Rod antenna will perform like a helical quarter wave. Three Hot Rods are available; HR-1 1/2 wave 2M Ant., HR-2 for 220 Mhz, and HR-4 for 440 Mhz. Amateur Net Price on all Hot Rods is \$19.95.

For either base station or hand-held operation AEA has the perfect VHF/UHF antenna. Put more punch in your Packet station with an AEA IsoPole or Hot Rod antenna. To order your new antenna contact your favorite Amateur Radio Distributor. For more information contact Advanced Electronic Applications, P.O. Box C-2160, Lynnwood, WA 98036, or call 206-775-7373.

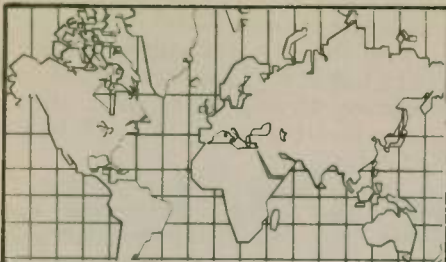
IsoPole Specifications

Model	144	220	440
Freq. Coverage (Mhz)	135-160	210-230	415-465
2.1 VSWR bandwidth	>12Mhz @ 146Mhz	>15Mhz @ 220Mhz	>22Mhz @ 435Mhz
Power Rating	1 kw	1 kw	1 kw
Gain**	3 dbd	3 dbd	3 dbd
Radiating Element Length	125.5" (3.2m)	79.25" (2m)	46" (1.2m)
Amateur Net Price	\$49.95	\$49.95	\$69.95

**dbd — db gain over a dipole in free space

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DX WORLD

John F.W. Minke III, N6JM

6230 Rio Bonito Drive Carmichael, CA 95608

Activities Calendar

- 18-19 October NZART VK/ZL Oceania Contest (CW)
- 18-19 October RKDDR Worked All Y2 Contest
- 25-26 October CQ Worldwide DX Contest (SSB)
- 08-09 November DARC European DX Contest (RTTY)
- 08-09 November RSGB 160-Meter Contest (CW)
- 19-20 November OEVS All Austria Contest (CW)
- 22-23 November CQ Worldwide DX Contest (CW)
- 06-07 December ARRL 160-Meter Contest (CW)
- 13-14 December ARRL 10-Meter Contest

W-100-N

- 282. N6IBP Paul K. Minning
- 283. VK4ATQ Brian Pittman
- 284. YB5NOF John E. Daluas
- 285. KD9NT Norman Wald
- 286. KU9I Fred M. Pfeiffer
- 287. W3BHM William E. Arnold
- 288. WB4FOT John T. Fitzpatrick
- 289. K6PKO Jerry A. Chandler

William Jeffrey, KA4CRT, raises the question concerning the validity of VQ9 (B.I.O.T.) contacts. He claims that it is not a political entity, does not issue stamps and has no native population. Also, all of the calls issued there are reciprocal calls.

The original nation list was established by Charles Signer, WA9INK, the DX Editor for *Worldradio* when I was still Awards Editor. As we have been accepting contacts for this one for eight years now, I can't see changing it now. As for reciprocal calls, I believe rule #2 explains that. If Bill came on with his VQ9WJ call, we could never tell if it was a reciprocal call or not. But if he appeared on the frequency signing

KA4CRT/VQ9, that would definitely have to count as reciprocal.

Charles and I pondered over the reciprocal call issue over eight years ago. We came to the conclusion that we would never be able to determine if a call was reciprocal or not as some countries issue regular calls as reciprocal calls.

Sri Lanka (4S7)

According to *The DX Bulletin*, A.B. Givens, GM3YOR is planning for a vacation in Sri Lanka the latter part of October. His operation will be mostly CW beginning on or about October 14 for two weeks. Listen for him near 3.502, 7.003, 14.033, 21.033 and 28.033 MHz. The last weekend he will be putting his efforts into the Worldwide DX Contest.

Report active from this one includes 4S7CF found between 14.172 and 14.205 MHz from 0100 UTC. Also in the same vicinity are 4S7VK and 4S7ZH, usually around the same time. You might also catch 4S7NMR, who moves about the band at the same time period.

Maldiv Islands (8Q7)

Also reported in the same bulletin, the only permanent license in the Maldives is Ken Grahn, SM7DZZ, operating as 8Q7CH. He is looking for a small 2-element beam to mount on his five-story building — which happens to be the tallest building on the Maldives. Anyone who can help should contact his QSL manager, SM5DQC, at P.O. Box 110, 59900 Odeshog, SWEDEN.

Look for Ken on 40 and 20 meters as he has been reported near 7.001 MHz between 1300 and 1330 UTC and up on 14.025 MHz around 1430 UTC.

Also reported from this one is a station signing 8Q7ZL on 14.195 MHz around 1400 UTC working Europeans.

Nepal (9N)

Pradyumna Rana, WB4NFO, is scheduled to return to Nepal for a month and plans to be there from October 9 through November 9. This period also includes operation at 9N1MM during the Worldwide DX Contest. He will also

be pushing Amateur Radio with the local government officials.

Father Moran, 9N1MM, has been working from a short list near 14.183 MHz around 0100 UTC. He may also be found elsewhere between 14.175 and 14.240 MHz. Whatever you feel about lists, this may be your only way — unless you wait for Rana during the WW contest the end of the month.

Other stations reported active from Nepal include 9N1FZ on 14.003 MHz at 1400 UTC, 9N1MC on 14.195 MHz at 1100 UTC and 9N5HCK on 14.176 MHz at 1715 UTC. 9N1MC is Krishna and is reported to be the Minister of Communications. The call 9N5HCK is the call reported to be issued to Japanese UNICEF Club.

Rodriguez Island (3B9)

According to *QRZ DX*, Taher Baccus, 3B8DB, is making plans to head to Rodriguez Island for the CQ Worldwide DX Contest the end of October. There have been restrictions on operating from the island for non-residents, so perhaps the ban has been lifted.

Presently on the island is 3B9FR, but he has not been operating. Evidently, he may not have any equipment.

Christmas Island (VK9X)

DX Hall of Famer, Ron Wright, ZL1AMO, was to come on the air mid-September for 30 days of operation. If he comes on as planned, he should be on right now! According to The Carolina DX Association, permission to operate from the privately owned island was obtained by Jim Rumble, VK6RU.

Ron will operate mostly on CW on all bands 10 through 160 meters. On SSB you might find him on 14.236 MHz around 0001 UTC or 7.180 MHz at 1100 UTC.

As this will be a costly DXpedition for Ron, the CDXA suggests sending \$1 with each card — or any other assistance you may feel proper.

For IOTA purposes, Christmas Island

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.. .. 80, 40M	40 ft ..	\$ 35 ..
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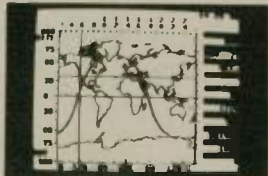
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counts as OC-02 and is not to be confused with another Christmas Island (OC-24), which is part of East Kiribati.

Marion Island (ZS2MI)

At the end of August, a brief operation by two South African amateurs was made from Marion Island as ZS2MI. According to *QRZ DX*, ZS6BBY reports that the operation was not legitimate as one of the operators was licensed for VHF only and the other wasn't licensed at all. Not only that, the government requested that they stop operating.

Caribbean tour

Bert Carter, WA4TLI, writes with the dope regarding a three-island cruise that he will be taking along with Ron Oates, AA4VK, the latter part of October. Bert says they will be operating from the Dutch side of Saint Martin from October 18 through October 25. They will also be operating from the French side from October 21 through October 26. A side trip to Anguilla is also planned for October 23. They will be active during the CW Worldwide DX Contest, but didn't say from where. With those dates they could be operating from portable PJ or FS — or from both!

Korea (HL)

Korea is definitely not on the most wanted list, but a lot of amateurs new to DX may still need this one. There are plenty of them around. They are just beyond the Japanese curtain.

Fairly active over there is Ken, HL9CW, who can be found on the low end of 20 meters near 14.003 MHz from 1145 and as late as 1300 UTC. Ken has also been found up on SSB near 14.153 MHz around 1230 UTC. *QRZ DX* reports that he is also down on 160 and 80 meters, (1800 to 1810 and 3505 MHz). Look for him at his sunset.

Also active from Korea is Jeff, HL9YG, and Kent, HL9OB. *The Long Island DX Bulletin* reports them active between 14.205 and 14.210 MHz from 1330 UTC.

Other HL9 types (U.S. personnel) include HL9EP on 7.003 MHz around 1300 UTC, HL9MM on 14.226 MHz at 1530 UTC, and HL9VG on 14.205 MHz at 1300 UTC.

If you desire Korean nationals look for any of the following:

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PO Box 173, Huntington, NY 11743

HL1AIC	14.199	0830
HL1CG	14.034	1400
HL1CO	14.015	0900
HL1HO	14.008	1315
HL1IFD	14.011	1400
HL1LDG	7.076	2330
HL1ST	14.027	1200
HL4CCM	14.208	1630
HL5BPL	14.015	1200
HL5PB	14.019	1230

Saudi Arabia (HZ)

HZ1HZ is active again on CW daily after 1800 UTC on 20 meters between 14.020 and 14.030 MHz. He has also been reported lower in the band as early as 1330 UTC.

Chagos (VQ9)

The DX Bulletin reports that Dale Strieter, W4QM, is back on Diego Garcia as VQ9QM. He should be there for a few months as a radio officer on a ship that is anchored in the lagoon. Occasionally, he spends the night on the island working the lower frequency bands. Dale has been worked on 20 meters near 14.027 MHz after 1445 UTC, and also on 40 meters at 7.006 MHz around 1200 UTC.

Also reported active is VQ9GB who was found on 7.001 MHz around the same time and later up on 20 meters SSB near 14.205 MHz at 1500 UTC. Another station, VQ9ZZ, has also been reported at 14.179 MHz at 0330 UTC.

Balearic Islands (EA6)

One fairly active station from this Mediterranean Island group is a non-resident signing EA6/G6ZY. He has been reported near 14.027 MHz after 2230 UTC.

Several resident stations have also been reported, which we have listed below. Of course, the frequencies are MHz and times in UTC.

EA6BE	14.180	0015
EA6BG	14.175	2030
EA6BG	14.202	1830
EA6DI	14.008	2200
EA6MR	14.185	2130
EA6SC	14.026	2300
EA6WV	14.227	2000

EA6WV oftens shows on the W7PHO Family Hour around 2100 UTC on 14.227 MHz.

Israel (4X5)

Westlink Report says that after two consecutive years of operating special event stations 4X5DS, located at the Dead Sea, and 4X5J, located within the walls of the old city of Jerusalem, the Israel ARC now plans an event to take place during the Easter season.

During "Easter 1987 in the Holy Land," the club is planning to establish special event stations at five historical and Biblical sites: Bethlehem, (please turn to page 34)

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DX World

(continued from page 31)

Jerusalem, Nazareth, Mount Tabor and Mount Beatitudes. Amateurs from around the world will be invited to take part. If you are interested please contact the Israel ARC at P.O. Box 4099, Tel Aviv, ISRAEL 61040.

Prefixes

The bands may be dead, but new or special prefixes are not. Great Britain has come on with a few of their "GB" calls. GB2FI was from Flatholm Island, located in the Bristol Channel; GB3BSI

operated from Brown Sea Island, located in Poole Harbor in southern England, GB6RC was active from Glenrothes, Fife, Scotland; and GB9DB was the special call issued to the Gloucester Amateur Radio Society to celebrate the 900th anniversary of the Domesday Book. Special QSL cards will be available for GB9DB, which will be sponsored by the British Post Office.

During the two CQ Worldwide DX Contests, CT1BY will be signing CR6BY and CR7BY respectively. Also in the contest will be YE0X, a special Indonesian call to be used in contests only. In celebration of the 60th anniversary

of the foundation of the first Bulgarian Amateur Radio club in Sofia in 1926, Bulgarian stations will be using the LZ6 prefix. The special calls will be used until the end of the year.

For the Royal Wedding in July, CU2ASW was a special call sign for Anthony's and Sarah's wedding for their honeymoon in the Azores. The call GB6RW was also active for the wedding.

Botswana stations were authorized to substitute their A22 prefixes with the special prefix of 802 during the 20th anniversary of the country's independence during September and October.

IOTA

Island hunters might want to check these out. Mind you that many of these

AS-05 Dickson Island	UZ0BWL	14.148	0630
AS-18 Sakhalin Island	UZ0FWN	14.028	1500
EU-11 Isles of Scilly	G4EBC/p	14.156	1430
EU-16 Lastovo Island	4N0CW	14.020	1500
EU-20 Faro Island	SL1FRO	14.022	1415
EU-29 Mors Island	OZ1IIT	14.141	0715
EU-32 Ile de Re	F6AXP/RE	14.201	0700
EU-35 Novaya Zemlya	RZ1OWB	14.150	0630
EU-43 Hoene Island	SM0CHH/6	14.213	0930
EU-48 Hoedic Island	F6BNQ/p	7.080	1330
EU-55 Karmoy Island	LA6FFA	14.220	1400

Also active this past summer from Rugen Island (EU-57) was Y29GA/p, Y29JA/p and Y66QL/p. Other activated islands included Sisargas Island (EU-77)

were summer DXpeditions and are presently not available. But, just in case you worked some of them, you will know

what they were. As usual, times and frequencies are UTC and MHz.

EU-57 Rugen Island	Y66RL/p	14.026	1030
EU-72 Skyros Island	DJ2GM/SV	21.200	1115
EU-79 Bergsoy Island	LA4MEA	7.084	2200
EU-84 Stockholm Island Group	SM0RNR	7.005	2100
EU-87 Storzjungfrun Island	SK3BP/3	14.260	1400
EU-89 Flores Island	CU8AA	7.042	2100
EU106 St. Tudwal's Island	GW4OFQ/p	7.095	0715
NA-46 Chappaquiddick Island	KV1B/1	14.173	2145
NA-50 Barter Island	NL7AR	14.277	0700
SA-26 Itaparica Island	PT7BR/PY6	14.190	1900

by ED1ISI, Kemio Island (EU-96) by OH1AD/p, Batz Island (EU-105) by FV6NDX/BAT, Cornwallis Island (NA-09) by VE8GD, Rhode Island

(NA-31) by W1FX, Ship Group (NA-82) by WE5Y and Henderson Island (OC-56) by VR6NP and VR6HIJL.

Happy Birthday NCDXC!

During the month of October, the Northern California DX Club will be 40 years old; it was founded on October 1946. The NCDXC is reported to be the oldest DX club around.

To commemorate this historical event, the club has offered a special certificate

to all amateurs outside the United States who can show proof of contact with 40 NCDXC members between the dates October 10, 1986 and October 10, 1987. The rules are the same as for the regular California Award that is sponsored by the club, except for the fact only 40-meter contacts are required in the

specified time period. All DX amateurs, including Alaska and Hawaii, are eligible.

Chuck Taylor DXpedition

Chuck Taylor, KC7UU, is scheduled to return to Africa during September and expects to be operating from Kenya (September 14-25), Tanzania (September 26-29) and Uganda (around October 1). Operation from Nigeria as KC7UU/5N6 is also expected.

Chuck left Africa earlier this year after contracting a serious case of malaria, but seems to have completely recovered.

QSL cards for all of Chuck's operations should be sent to Doris Peterson, 845 Ramona Drive, Santa Rosa, CA 95404.

Antique QSL Department

Cliff Stratton, N6LFP, sent in this old-time Japanese QSL card. The call J3DQ was assigned to Tatsuo Takeuchi, who is now JR3DLW. Cliff had worked him recently under his new call. Tatsuo used this call back about 55 years ago in 1931. He lost everything during World War II. Look for JR3DLW on 15 meters where he will be running a TS940S with (please turn to page 36)

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Safety is always important. You should be particularly aware of safety during the planning and installation of antennas.

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DX World

(continued from page 34)

a 4-element Yagi. Tatsuo is 74 years of age.

Marty Oberg, W6RFY, responded to the MD2AC QSL that was in the September issue. Seeing Milt's old card sent Marty on a nostalgia trip as he

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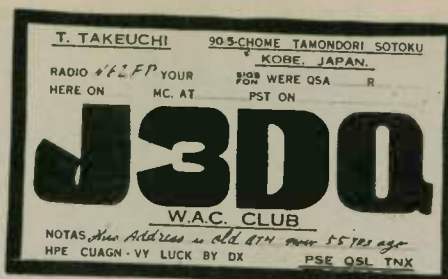
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used to sign MD2EU in Tripoli. Marty isn't active in Amateur Radio these days, but he still has the logbooks for his MD2EU operations.

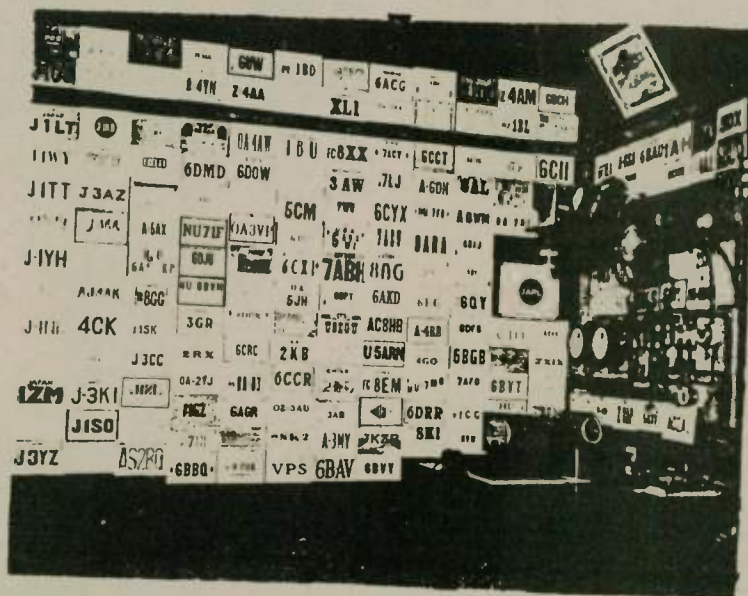
QSL help

Coleman Murphy, W3BBL, is looking for some assistance in obtaining a QSL card for contacts that he has made with

Shanti, 4S7WP. Cole has worked him several times and has always been told to QSL direct. The direct route brings nothing in return. Anyone having better luck with this one?

Bill, KC9AL, is looking for QSL information for a September 1977 contact that he made with S79R, who is now back in California. Bill says he believes that Carl is now living in the Santa Maria area. Carl usually shows up at the annual DX convention in Visalia, but we don't recall what his new call is.

Incidentally, Bill, you should have given me your 1977 call as you just might be getting some quick action on this one. The call KC9AL doesn't seem that old and wouldn't be in the S79R log.



This is what a typical DX station looked like back in the 1920's. This one belonged to AJ4ZZ of Japan. Those were the days before the official prefixes were assigned. The prefix usually consisted of the first letter to indicate continent and the second letter for the country. Thus 4ZZ used A for Asia and J for Japan. For local contacts the prefix wasn't used at all.

If you look closely at those cards on the wall, you will see AC2AL (China), NC5CC (Canada), OA5WR (Australia) and NU7IF (United States). And, if you look real REAL close, you will see SK2 (Isle of Borneo). This is the same one

that was in the Antique QSL Department in our February 1979 column. This call belonged to Horace Gray, who wound up in a Japanese prison camp when the war broke out. Horace survived the war, but didn't return to Amateur Radio until many years later. Horace came back on as 9M8HG and was quite active. He died several years ago, and if he were alive today he would have been 90 years old. His BN-SK2 card is directly above the VPS card on the bottom row.

Oh yes, thanks to Mick McDaniel, W6FGE, for submitting this old photo!

Visalia DX Convention

Plan now to attend the 1987 International DX Convention, hosted by the Northern California DX Club, to be held at the Grosvenor Hotel in Visalia (formerly the Holiday Inn). Mark your calendars for the dates April 3, 4 and 5. For reservations call the hotel directly at (209) 651-5000. Since the hotel has

been blocked off for the convention, please do not use the 800 number as you will be told that they are full.

Convention charimen this year are Len Gerald, K6ANP, and Lyle Meek, WW6F, with the O'Briens, Jay, W6GO, and Jan K6HHD, Publicity Chairpersons.

QSL routes

- A35JF -G4AAL
 - C4LWF -5B4JE
 - C30AAN -DL8OH
 - C30BBC -F6EGG
 - C30BBP -PA3BMJ
 - C30BBX -PA3BMJ
 - C30CAW -DK3VH
 - C30CAX -DL4VB
 - C30CYA -PA3BMJ
 - C30DAJ -ON4TJ
 - C30DAK -ON4TJ
 - CO2HQ -XE1XF
- (See Note 1)
- CR2UA -W3HKK
 - CR6BY -WA3HUP
 - CR7BY -WA3HUP
 - DJ4SN/CP8 -DJ4SN
 - DK4YA/VE8 -DK8MZ
 - DU1KT -DD3OE
 - ED1ISI -EA1ANE
 - EH5FDO -EA5FDO
 - F6AX/PRE -F6AZQ
 - FO0XB -WB6GFJ
 - FV6NDX/BAT -F6AJA
 - GB9DB -G4AYM
 - H44RO -W6CNA
 - HB9CRV/CT3 -HB9CRV (or bureau)
 - HB9DFX/CT3 -HB9DFX (or bureau)
- HG19HB -HA5WA
 - HL9LB -N4GNNR
 - HL9MM -KA6V
 - HP1XXO -W0ANZ
 - HS0C -JA8ATG
 - HS9PR -Bureau
 - J5WAD -W6CNA
 - JT1BG -W7PHO
- (See Note 2)
- KA2PF -W6CNA
 - KH9AC -WK9T
 - LZ6HA -LZ1HA
 - LZ6IP -LZ1IP
 - LZ92S -LZ1KDP
 - OE5JTL/YK -OE5BA
 - OYDF2P1 -DF2P1
 - RA6AR/UF -UA90J
- (See Note 3)
- SJ9WL -Bureau
 - SL1FRO -SV1JG
 - SV1JG/SV5 -SM2NOO
 - TL8BA -PA0ZBL
 - TL8HZ -W2WZ
 - TL8KH -DL8DC
 - TY9ER -DL4BC
 - TZ6WC -15YZB
 - TZ0RD -UA3LAR
 - UA0BEO -UA90J
 - UZ90WB/RD -UA90J
 - V85MK/OD5 -KG6WH
- VK9X1 -ZL1AMO
 - VK0SJ -WB6AFJ
 - VP5DG -KA5RGE
 - VQ9GB -NA7P
 - VQ9QM -W4QM
 - VS6CT KP2 -KA6V
 - W7AWA/OX -W7AWA
 - XU1SS -JA1HQG
 - Y29GA/P -OK2BOB
 - Y29JA/P -OK1AMM
 - YB18AR -YB0DPZ (or bureau)
 - YE0X -YB0TK
 - YN8RC -WB8SSR
 - YS9JY -NF5J
 - YZ0U -YU2BHI
 - ZF2JU -KV9S
 - ZL7BKM -ZL2HE
 - 3D2QU -KB1QU
- 3X0HSH -DK8PR
 - 4N3E -YU3HAM
 - 4N9S -YU2CBM
 - 4N8CW -YU1BM
 - 4N0IARU -YU4FRS
 - 4X0WAE -DK91P
 - 5H3ZO -K0LST
 - 5R8JD -TU2NP
 - 5T5HL -DL8DF
 - 5Z5EXP -DJ6S1
 - 6Z3AA -JA2ALT
 - 7S1FRO -SM5AHK
 - 8Q7CH -SM5DQC
 - 9H3FI -IT9VDQ
 - 9L1AR -DK9XD
 - 9N1NFO -WB4NFO
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 - TI2LTA -Luis, P.O. Box 1430, San Jose, COSTA RICA
 - V31PC -P.O. Box 7, Punta Gorda, BELIZE
 - ZL8OY -Chris Hannigan, 4 York Avenue, Heratunga, Wellington, NEW ZEALAND (See Note 6)
 - 8R1AMO -P.O. Box 10867, Georgetown, GUYANA
 - 8R1OJS -P.O. Box 10867, Georgetown, GUYANA
 - 8R1J -Peter Taylor, P.O. Box 10767, Georgetown, GUYANA
 - 9L1RH -P.O. Box 705, Freetown, SIERRA LEONE
 - 9M2TY -Tim O. Yeider, P.O. Box 10777, Kuala Lumpur, WEST MALAYSIA
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Maximum Usable Frequency from Burbank, CA
(courtesy of W6LS)

The numbers listed in each column are the Maximum Usable Frequency (in megahertz) for contacting five major areas of the world (Nairobi, Tokyo, Melbourne, Frankfurt, Rio de Janeiro) for low fire angle antennas.

You can get a free complete set of these predictions for low angle antennas, Maximum Usable Frequency (MUF) and Frequency of Optimum Transmission (FOT). Requests should be sent to Bill Welsh, W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by an SASE (54¢) envelope at least 9" x 11 1/2".

DECEMBER 1986

UTC	AFR1	ASIA	OCEA	EURO	SO AM
0100	10.5	16.7	20.7	9.6	12.9
0200	7.7	12.8	16.2	9.1	11.7
0300	6.8	10.2	12.9	8.5	11.9
0400	9.2	10.0	11.4	8.1	12.5
0500	9.2	10.2	11.0	6.8	12.4
0600	9.6	10.2	10.8	6.4	11.2
0700	10.1	10.0	10.9	7.6	10.7
0800	10.6	9.7	10.9	10.3	10.8
0900	10.8	10.0	10.5	11.7	12.7
1000	10.7	10.1	10.8	11.6	13.6
1100	10.0	10.7	11.8	11.7	11.2
1200	9.5	10.8	12.0	10.0	10.1
1300	10.3	9.8	10.7	10.0	12.0
1400	12.7	9.0	10.0	11.7	15.9
1500	15.6	9.6	12.5	14.9	19.5
1600	17.9	12.2	16.5	12.9	21.6
1700	19.7	11.7	15.1	10.9	22.2
1800	21.4	11.2	14.9	9.4	22.3
1900	22.3	11.4	16.7	8.7	22.5
2000	20.3	13.1	19.5	8.5	23.2
2100	18.0	15.2	21.3	8.4	23.7
2200	15.7	18.7	22.1	8.6	22.8
2300	13.9	20.7	23.0	9.1	19.8
2400	12.6	20.6	24.0	9.6	15.9

- A6XTH -P.O. Box 24144, Abu Dhabi, UNITED ARAB EMIRATES
- AM0EEE -Comite Organizador del Ralley, Radio EEE, P.O. Box 2071, CP 50080 Zaragoza, SPAIN
- BY4AOM -P.O. Box 227, Shanghai, PEOPLE'S REPUBLIC OF CHINA
- CE0FQV -P.O. Box 59, Easter Island, CHILE
- CU8AA -P.O. Box 34, Santa Cruz, Flores Island, Azores 9970, PORTUGAL
- FO0CW -Jacky Calvo, 5-10-5 Shimomoguro, Maguro-ku, Tokyo 153, JAPAN
- FR4DN -Philip Mondon, CD16, Avirons, F97425 FRANCE
- FY4EE -B.P. 999, Cayenne, FRENCH GUIANA
- GB4CGW -P.O. Box 20, Motherwell, ENGLAND
- J28DN -Michel Cailiaux, P.O. Box 1724, DJIBOUTI
- JW8FG -Bjarne JW8FG, Bear Island, N9176 NORWAY (See Note 5)
- KG4XO -GARC, FBPO Box 73, Norfolk, VA 23593
- NL7AR -Dale Mangels, P.O. Box 74, Kaktovik, AK 99747
- OY9JD -P.O. Box 2028, Torshavn, 3800 FAEROE ISLANDS
- PT7BR/PY6 -Pepe, P.O. Box 975, Fortaleza City, Ceara 60 000, BRAZIL

- Notes**
1. Use the address for XE1XF listed in the 1985 Callbook only.
 2. This applies for contacts made with JT1BG on the W7PHO Family Hour only.
 3. As for all Soviet QSL managers, all cards must go via P.O. Box 88, Moscow, USSR, unless indicated otherwise.
 4. Please do not send any QSL requests for this station until after November 23.
 5. Send your QSL requests direct only for JW8FG. Do not use bureau.
 6. This is a new address for ZL8OY!

Contributors this month include W3BBL, KA4CRT, WA4TLI, W6CF, W6GO, N6LFP, W6RFY, W6FGE, KC9AL, W9LNQ, The Carolina DX Association (W4WMQ), DX Incorporated (WA9BXB), Southern California DX Club (NK6A), Northern California DX Club (W6CF), Western Washington DX Club (K7ZR), Long Skip (VE3IPR), Westlink Report, The DX Bulletin (VP2ML), QRZ DX (W5KNE), The Long Island DX Bulletin (W2IYX) and DX News Sheet (G4DYO). Our thanks go to these gentlemen and their publications.

We hope you all had an enjoyable summer. Ours was a busy one with us gone a good part of the time back east with our 16-year-old singing daughter. I met a few DXers at the two conventions we attended - the Pacific Northwest DX Convention in Seattle and the Delta Division Convention in Shreveport. Thanks for stopping by to say hello!

By now the cooler months have set in and we hope a promise for some new ones for many of you. Good luck and good DX! Very 73 de John N6JM. □



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Silent Key in Kiev?

Some of you may have missed the report of a QSO between a ham in Kiev and one in Jerusalem. The Russian ham was a lot more talkative than any Old Ed has worked. He gave a report on the reactor disaster there which was a lot more detailed (and a lot more negative) than anything TASS was putting out.

I've no idea what Soviet logging and ID requirements are, but I'll bet the KGB had little trouble identifying the loose-tongued operator. 73, Tovarisch; HPE (pray?) TO CUL! - North Bay ARC, Vallejo, CA □

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

ARRL National Convention

The ARRL National Convention held in San Diego is history. The 10-10'ers held a 10-10 Forum on Saturday morning with approximately 50 in attendance. President Howard Bowman, W6QIR, 10-10 #4909, conducted the open forum and the 10-10 organization was explained to non-10-10 members in attendance. Director Morrie Goldman, W6EHM, gave a brief history of 10-10 and the organization with help from several old-timers in the audience.

A discussion was held on the possibility of 10-10 having an annual international convention. After considerable discussion, President Howard Bowman asked for a show of hands of those in favor of 10-10 authorizing a chapter to host a 1987 International Convention. It was a unanimous vote in favor of doing so. Time and place to be approved by the Board of Directors. It was stated that The Red River Chapter of Shreveport, Louisiana has offered to host the first 10-10 Convention. More on this later as plans develop.

After the forum concluded, Director, W6EHM, and Vice President, W6QIR, activated the 10-10 Club Station, W6OI, for those needing 10-10 #109.

10-10 International Net Fall CW QSO Party

The Fall CW QSO Party will be held on the first weekend in November, be-

ginning November 1 at 0000Z and ending at 2400Z on November 2. Ten-Ten QSO Parties are open to all amateurs, but only 10-10 members with paid-up dues are eligible to win awards. Contacts can be used to qualify for membership in 10-10 or for adding 10-10 numbers to your list of worked numbers.

Brief summary of the rules: Contacts must take place between 28.0 and 28.2 MHz. Exchange call, name, city, state and 10-10 number. Single-operator stations only are acceptable, and both RTTY and CW can be used. **Scoring:** 2 points for each contact with a 10-10 number exchange and 1 point for each contact without a 10-10 number exchange. Logs are acceptable from 10-10 members with paid up dues only and should be sent along with a dupe sheet to: Lilac City Chapter, c/o Al Lafky, K7YY, P.O. Box 14643, Spokane, WA 99214, postmarked no later than December 1, 1986.

Even if you are not interested in competing in the QSO party for the sport of winning, join in for a short period and give our your number to those interested in trying to win. If you are not a 10-10 member, QSO parties are a fast way to collect 10-10 numbers in a short time. Remember, it takes only 10 10-10 contacts to qualify for membership in 10-10. You could probably make it in a few minutes during the QSO party.

10-10's club station

For those of you who may not know, the 10-10 International Net has a club station call and 10-10 number. It is the former call of one of our earliest members — Jim Paine, W6OI (Silent Key). Jim was an active 10-10 member from the earliest days of 10-10 and was the secretary-treasurer way back when both of those offices were one. Jim lived in Inglewood, California and was also active in the Inglewood Radio Club.

The club call is in the trusteeship of Morrie, W6EHM. The 10-10 club station, W6OI, 10-10 #109, is available for special 10-10 event functions and is the

only way that 10-10 #109 can be obtained at this time.

Multi-year dues

By a recent action of the 10-10 Board of Directors, multi-year dues cannot be accepted for a period exceeding five years. The action was not a result of not wanting members to pay multi-year dues, but — believe it or not — a result of the computer that keeps track of our dues status not being able to accept dues payments beginning with the year 2000. This all came to light when one member decided it was too much trouble to pay his \$4 each year, so he sent in \$100 for 25 years. The result — the computer blew its fuse. Various methods to correct the problems are being evaluated, but for the time being, five years of pre-paid dues will be the limit.

Feedback

It continues to amaze me how any requests for 10-10 information and requests for membership application I receive each month. This month was no exception.

Frank Koczian, WB7SYO, of Portland, Oregon, writes that he has been off the air for five years and knows nothing about 10-10. He does now as he has all of the information. From Uplands, Sweden, a nice letter from Eric Lund, SM0JSM, who states he has made over 10,000 contacts on 10 members since becoming a ham in 1979, mostly from EA8TY. Hope Eric follows through and gets his 10-10 number. Eric says that he visits the Canaries now and then and will activate his 10-10 number from EA land.

Larry Greidinger, WA2DGD, just got back on the air after being inactive since 1971. Says he got side-tracked by girls, college, med school, starting a practice, etc. Now, since Larry is back on the air, he has found 10 meters and wants his own 10-10 number. Larry's closing comment: "Who said 10 meters was dead?" Don, NE1N, says he has only been a ham for eight months and wants to know what this CQ 10-10 is all about. Just a few of the many notes and comments received last month. Thanks to all. Sorry time does not permit a personal answer to all.

Briefly

For those who are not 10-10 members and are interested in finding out about 10-10 and how to become a member and get your own 10-10 number, a #10 (business size) SASE to me at 18130 Bromley Street, Tarzana, CA 91356-1701 will get you all the information.

Again, a request for anything of interest that you may have that can be used in the column. How about some of your chapter heads? What is going on with your group? Drop me a line. Best 73 to all es cu next month. □

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1412 1412G	144-148	160	30	6	15
2210 2210G	220-225	130	10	7	12
2212 2212G	220-225	130	30	7	12
4410 4410G	420-450	100	10	1.1	12
4412 4412G	420-450	100	30	1.1	12

Models with G suffix have GaAs FET preamp. Specify 10 MHz Bandwidth for 420-450 MHz amplifier.

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and up to 6 months, Reno Radio will repair unit at no cost, again if the unit has not been damaged or altered. This applies to the original owner and if the product was purchased at Reno Radio. Give us a try. I am sure all amateurs and Reno Radio will have a long and lasting business relationship.

73, Jim Myers, WA6ICB, President



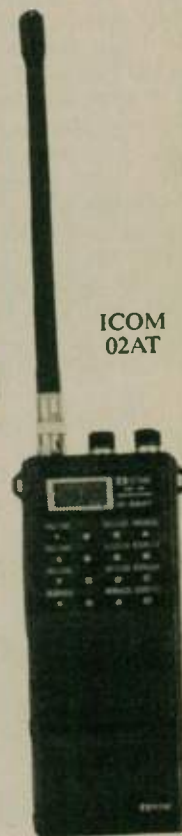
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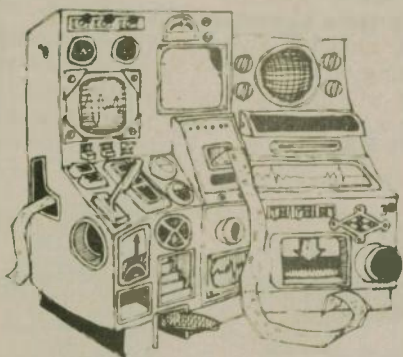


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Computers and Hams

Julian Macassey,
N6ARE



Ramblings

This month's column will not deal so much with one subject, but really just odds 'n' sods about computers, users, non-users, manufacturers and anything else that annoys me at present.

Who reads this column?

This column is aimed at the radio amateur who would like to get started, or has just gotten started, with a computer. It is also aimed very much at the computer haters — the people who are quite sure that life was better before power supplies were 5 volts DC.

Sometimes, when hours of work disappear into the guts of a computer, never to be seen again, I couldn't agree with them more. Horrible fact is, computers are here; you can either be their master or their slave. Nothing is funnier than telling the bank what to do with their computer other than suggesting it be used as a proctological instrument. Bank employees are as computer illiterate as the rest of the public.

Talking to people at shows and clubs, it would appear the readers of this column are people who have computers or are already computer pundits. It would appear I write for critics. The am-

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ateurs that do not own computers tell me they don't read this column because they don't have computers and don't see a need for them. Boy, it's tough being a missionary.

When are they going to write computer manuals in English?

We probably all have our favorite examples of a manual or catalogue written in "JINGLISH" (Japanese English). This was caused by university-trained Japanese translators who had studied English by reading Dickens. They tried to explain things and caused nothing but hilarity. Most of them were quaint, but comprehensible. Things have greatly improved over the years with Japanese manuals.

Computer manuals are a different story. They are written by people whose native language is English. You would never guess this by trying to read the manuals. It would appear that the last thing a computer software or hardware company thinks about is the documentation that explains why their whizz bang is better than anyone else's.

Some of these companies think their documents are OK. They see no need for change. Who reads manuals anyway? Maybe their sales would improve if they provided readable manuals. Who is going to be the first bold company to issue

the first manual written in English as she is spoken?

Reading some of these manuals can sometimes give the distinct feeling that the writer has never seen or used the hardware or software that is being described. The grammar of some of these manuals is so obtuse, you wonder if the writer is capable of normal conversation. There is no need to worry about the Eastern bloc stealing American computer technology; they will be stymied trying to read the manuals.

The TAPR (Tucson Amateur Packet Radio) manual for the TNC 1 (Terminal Node Controller) was excellent. In fact, the manual alone was worth the money paid for the hardware. Funny how an amateur volunteer effort produces a readable manual. Somehow the flashy multi-million dollar operations can't seem to find a writer. Perhaps a Pulitzer prize for computer manuals would raise the standard.

Why can't we have some standardized commands?

Some programs use control C to get out of them, some use control F, some use a backslash. It would appear that programmers like to be creative with common commands. This can mean taking 10 minutes to get out of an unfamiliar program.

Harold Price, NK6K, who wrote the first TAPR TNC commands for packet radio, used all the common and logical commands. Well done, Harold. For that you deserve an award. If you are slightly familiar with computer operating systems, giving commands to a TNC is a breeze.

When are they going to put transient protection in power supplies?

Digital circuits are very sensitive to any excursions from their 5V supply. Any owner of a digital device knows this. Why do they know this? Because manufacturers are too stupid, cheap or lazy to put three to six more components into the device to take care of AC line transients caused by motors, switching and other "normal" events on an AC power line. So everyone who has a digitally-controlled radio or computer has to go out and buy a "line conditioner," costing from \$30 to \$100, so their equipment will work the way it is supposed to.

These line conditioners are over-priced and with decent power supply design, unnecessary. Ten years ago when I designed power supplies, I filtered the AC input. People laughed; they never complained about losing data though.

What if spreadsheets are so what?

One of the biggest business applications of personal computers is "spreadsheets". What is a spreadsheet? It is a

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program that prints out columns of figures. It can add, divide, multiply, etc. any column or row with any other. This is very useful for figuring inventory, hours worked by who, on what job, and such things. Alas, it gets used all too often for what I call "MBA space invaders."

This is where fictitious numbers are entered to show "What if" such as "What if we sell 3 million widgets?" The program will show just how much money you need and what your "market share" will be and all sorts of stuff. This is fantasy and guesswork; there is often

little or no fact behind it. But because the computer said we are goin' to do it, we will.

Back in the old days we used fortune tellers for this kind of stuff. Rubbish out of a computer is still rubbish.

Is computer literacy an asset or a liability?

Being the computer pundit can cause you to be loved or hated, courted or shunned. Different people react to the computer literate in different ways. These days if you know where the on/off switch is, you are a smart aleck. The ig-

norant will heap scorn on you. They may even leave you off the company committee to purchase a new computer.

The horrible fact is that in a few years, not being able to use a computer terminal will relegate you to the same group that doesn't know how to drive a car. At your next job, there may be a terminal sitting on the desk. Your next machine tool will have a computer sitting on it. The next car you fix may have a problem with one of its computers. Your next radio will have a computer.

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Amateur "Hi"

Norman M. Weed, W6CE, of Fremont, California wins this month's "Amateur 'Hi'" award — a free year's subscription to Worldradio.

During my 54 years as a radio amateur, I have spent many hours operating Aeronautical Mobile. My favorite story is about a contact with a ham in Newark, California.

I was using the call K6FNG, issued to the 144th Fighter Wing, California Air National Guard, the unit for which I served as Communications Officer for many years. I was back at the radio operator's position in a C-47 (ART-13, BC-348, Trailing Wire Antenna). Up forward was my favorite crew — Colonel Quinn, W6MOM, and Major Stewart, W6MJM.

After a few transmissions the Newark station learned that we were over Palo Alto, and we learned that he had had one too many.

"Hey, can you find the Dumbarton Bridge?"

"Yes sir," I replied.

"Can you fly toward Newark?"

At least one of the pilots had switched his audio to "Liaison", so we flew toward Newark. It was dark, and there were other aircraft in the area, so he asked if we'd turn on our landing lights.

"Hey, gotcha now!"

About that time we heard his XYL in the background: "Get off the air; you're drunk."

"No," he protested, "I'm talking to that airplane. Turn left, airplane."

The pilot executed a left turn.

"See, he does whatever I tell him to! Turn right, airplane."

We did, and that's the last we heard from him. Apparently, the XYL pulled the plug. □



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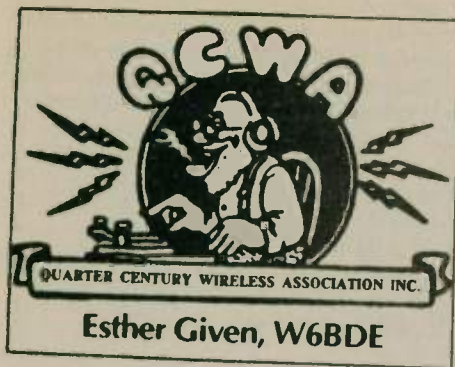
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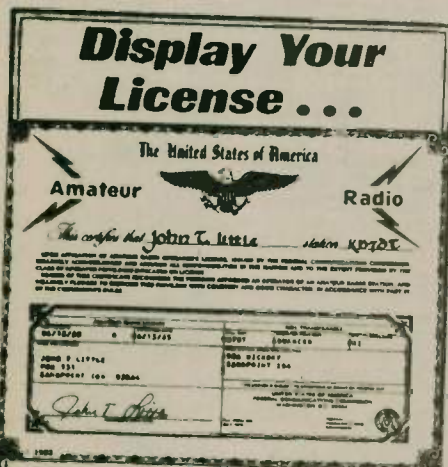
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It is a real pleasure to be the harbinger of happy news that recognizes the accomplishments of amateurs of all ages. Some are just setting forth on the jaunt, following in the wake of pioneers who have devoted a lifetime blazing the trail of Amateur Radio.

This month's column is devoted in great part to extending congratulations.



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Seven go to young people who will not be eligible for QCWA membership for many years. Another item announces an appointment to the Board of Directors. A third salutes a YL and others who have attained recognition for 50 years in ham activities.

QCWA is pleased to announce the six \$600 winners in its 1986 scholarship awards program:

Michael Kazigian, KA2MRK, Park Ridge, New Jersey, is pursuing a B.S. in electronics at Lehigh University.

Lesley Ann Redman, KA9PCV, Highland Park, Illinois, plans to study biochemistry and genetics at MIT.

Michael I. Silverglate, KR9Q, Sheboygan, Wisconsin, has completed his first year in mechanical engineering at MIT.

David J. Swiatlowski, KA2KLM, Camillus, New York, entering his third year at Clarkson University in pursuit of a B.S. in electrical/computer engineering.

Diane E. Willemin, KE8DJ, Elyria, Ohio, will be a junior at Notre Dame, studying toward a B.S. in electrical engi-

neering. She comes from an all-ham family.

Troy C. Wood, Jr., KB4DNE, Tusculumbia, Alabama, will enter his sophomore year at Northwest Junior College in Philcampbell, Alabama. He is also working toward a degree in electrical engineering.

In addition to the above, QCWA offers a \$500 memorial scholarship in memory of Robert S. Cresap, W9LR, sponsored by his daughter, Roberta Cresap Jones. The 1986 recipient is Douglas E. Swiatlowski, KA2KMT, Camillus, New York, who will be a sophomore at Clarkson University. Like his brother, he's seeking a degree in electrical/computer engineering.

The QCWA Scholarship program is administered by the Foundation for Amateur Radio, Washington, D.C. This group screens applications, establishes eligibility and makes award decisions for the scholarships sponsored by various Amateur Radio organizations. This year, seven of the 19 scholarships awarded through FAR administration were contributed by QCWA.

John Kelleher, W4ZC, has been appointed to the QCWA Board of Directors to complete the term of Harry Gartsman, W6ATC, whose recent resignation was regretfully accepted. A resident of Annandale, Virginia, Kelleher has an impressive background in radio communication including the Signal Corps, RCA, NASA and 20 years as a delegate to CCIR and ITU conferences. His term of office runs to August 31, 1987.

Among the many recognitions available to QCWA members is the Golden 50 Year Certificate. Presentation of this coveted award is usually a festive affair sponsored by the honored guest's QCWA chapter and attended by family and friends. During the year, perhaps 50 such certificates are awarded — too many to be recorded in this column. However, a recent event in New York honored a YL, Viola Grossman, W2JZX. Very few YLs have achieved the "50 years a ham" plateau. Vi, a freelance artist, has always found time to contribute her artistic talents as well as her radio expertise to the Amateur Radio community over this half century.

Arthur Stangel, W2JZH, was also awarded the Golden 50 Year Certificate on the same occasion. The awards were presented by Harry Dannals, W2HD, a former QCWA Directory. We salute them and all recipients of this well-earned recognition of achievement.

QCWA's 30th Annual Spring QSO Party is scheduled for February 7 and 8, 1987 for CW and March 7 and 8, 1987 for phone. Official rules and information will appear in a later issue in this column.

Only One Person in the World has your call . . . YOU!



Letter style on shirt is "Ivy Open" and on cap is "Sportswear."

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VISIT YOUR LOCAL RADIO CLUB.

For information on how to get your club listed in "Visit Your Radio Club," plus receive many other benefits, write to Dave Tykol, WA6RVZ, Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

ALABAMA

Birmingham Amateur Radio Club, Inc. (BARC)
Meets at the American Red Cross Building
2225 3rd Ave. North in downtown Birmingham, Alabama
1st and 3rd Thursdays/monthly at 7:30 p.m.
For info call Chuck Conkell, N4MLN, (205) 322-9620

ALASKA

Arctic Amateur Radio Club
Geophysical Institute West Ridge U of A
PO Box 81389
College, AK 99708
1st Friday/monthly - 7:30 p.m.

ARIZONA

Scottsdale Amateur Radio Club
Scottsdale Senior Center
Corner of Wells Fargo/2nd Street
1st Wednesday/monthly — 7:30 p.m.
rpt. 147.18(+) or 444.000(+) • Call (602) 951-8300

CALIFORNIA

Amador County Amateur Radio Club
P.O. Box 1094, Pine Grove, CA 95665, Pioneer Elementary
School, Pioneer, CA • 1st Thurs/monthly 7:30 p.m.
WA6WY Rptr. — 146.835, 146.235.
Net Tues. 7:30 p.m.

Anza Valley Radio Club
Outpost Restaurant
56400 Hwy #371
Anza, CA 92306
Meets: 1200 noon, last Sunday/monthly

Associated Radio Amateurs of Long Beach, Inc. W6RO
P.O. Box 7493, Long Beach, CA 90807
Meets: 1st Friday/monthly — 7:30 p.m.
Signal Hill Recreation Hall
1708 E. Hill St., Signal Hill, CA

Contra Costa Communications Club WD6EZR
P.O. Box 661, San Pablo, CA 94806
Meets 2nd Sunday at 9:00 a.m.
Hickory Post Restaurant/Lucky Lanes
For info call Carl KA6OLK (415) 237-2621

Fresno Amateur Radio Club, Inc.
P.O. Box 783, Fresno, CA 93712
Meets: 2nd Friday/monthly — 8:00 p.m.
Wawoha Middle School; 4524 N.
Thorne; Fresno. W6TOR 146.34/94

Gabilan Amateur Radio Club
South Valley J.H.S.
385 IOOF Ave. • Gilroy, CA 95020
Meets: 2nd Thursday/monthly — 7:30 p.m.
Talk-in 145.47-

Golden Empire Amateur Radio Society (VEC)
P.O. Box 508, Chico, CA 95927.
Al Biegler WA6WJZ (916) 343-6141/call 146.25/85
Meets in conference room 1, Enloe N T Memorial
Hospital, 3rd Fridays/monthly — 8:00 p.m.

Hangtown Amateur Radio Club
P.O. Box 305, Placerville, CA 95667
Meets: 3rd Wednesday/monthly — 7:00 p.m.
Senior Citizens Center, Spring St., Placerville
Info: (916) 622-9488

Kern River Valley Amateur Radio Club
P.O. Box 1902, Lake Isabella, CA 93240
4th Saturday/monthly — 4:00 p.m., (Pot Luck)
Veteran's Hall, Lake Isabella
WA6UYW Repeater 146.085/146.685

Livermore Amateur Radio Klub (LARK)
Dublin Library • Livermore, CA
3rd Sat./monthly—9:30 a.m. • Net-147.12 Mondays 7 p.m.
Dwight Becker KA5EQO (415) 484-1456
3731 Oak Brook Ct., Pleasanton, CA 94566

Marin Amateur Radio Club (MARC) W6SG
Box 1231, San Rafael, CA 94901. Meets 1st Fri./8 p.m.;
MARC Clubhouse Bldg. 549, HAFB, Novato, CA (415) 883-
9789 (Summer exceptions; contact Pete N6IYU, 924-1578)
Sunday AM Club at Red Cross, San Rafael

Mt. Wilson Repeater Assoc. (M.W.R.A.)
P.O. Box 1384
Monrovia, CA 91016
Net. Mon. 7:00 p.m.
WB6JPI Repeater 146.400/147.435

Naval Postgraduate School Amateur Radio Club K6LY
Monterey Peninsula; 146.97, 444.7
2m net Weds. 8 p.m.; Meets 2nd Thurs. 7:30 p.m.
Contact: Keith Beard WE6R
9 Cielo Vista Terrace • Monterey, CA 93940

North Hills Radio Club
P.O. Box 41635, Sacramento, CA 95841
3rd Tuesday/monthly — 7:30 p.m., Carmichael Elks Lodge
5631 Cypress Ave. • Carmichael, CA
Net 145.19 Thur. at 8:00 p.m.

Radio Amateur Mobile Society
Meets: 2nd Tuesday/monthly — 7:30 p.m.
Carmichael Elks Bldg.
Cypress and Hackberry, Carmichael, CA
Net Saturday a.m. 224.84 8:30/146.79 9:00

River City A.R.C.S.
Meets: 1st Monday/monthly — 7 p.m.
Glendale Federal Savings
Maryal Dr. and Watt Ave. — Sacramento
For info: (916) 483-3126

Sacramento Amateur Radio Club, Inc.
Contact: Ron Wenstrom, KJ6R, (916) 962-2415
after 6 p.m. Meets Sac. Blood Bank
32nd St. & Stockton Blvd.
2nd Wednesday/monthly—7:30 p.m.

San Fernando Valley ARC Inc. (W6SD)
Meets 3rd Friday/monthly — 7:30 p.m. • Red Cross
Bldg. 14717 Sherman Way, Van Nuys, CA 91407. Exams
8 a.m. 1st Sat./monthly • Pre-registration via P.O. Box
3151, Van Nuys, CA 91407

San Gabriel Valley ARC
Bowling Green Clubhouse
405 S. Santa Anita Avenue
Arcadia, CA 91006
1st Tuesday/monthly — 7:30 p.m.

San Mateo Radio Club
Beresford Park Recreation Center
28th Ave. and Alameda de las Pulgas
San Mateo, CA 94403
3rd Friday/monthly — 7:30 p.m.

Santa Clara County Amateur Radio Assoc. W6UW
P.O. Box 6 • San Jose, CA 95103. W6UU 146.385 +
Meets: Santa Clara County Service Center
1555 Berger Dr., Building 2 Auditorium
2nd Monday/monthly — 7:30 p.m.

Sierra Foothills Amateur Radio Club
P.O. Box 3262, Auburn, CA 95604.
Office of Education Bldg., 360 Nevada St., Auburn, CA.
Meets: 2nd Friday/monthly at 7:30 p.m. Net Thurs.
7:30 p.m. Rptr. 145.43- Tues. 7:30 p.m. 28.543 MHz.

Sonoma County Radio Amateurs, Inc.
P.O. Box 116 • Santa Rosa, CA 94502
Emergency Operations Center (rear entrance)
600 Administration Dr., Santa Rosa, CA
Meets: 1st Wednesday/monthly 7:30 p.m.

Stanislaus Amateur Radio Assoc. (SARA)
P.O. Box 4601 Modesto, CA 95352
Stanislaus Co. Administration Bldg.
12th & H Streets • 3rd Tues./monthly — 7:30 p.m.
145.39 MHz WD6EJF

Tahoe Amateur Radio Association
Meets 2nd Saturday/monthly. 1200 lunch, 1300 mtg
Zephyr Cove Library. Contact Jim Leitner, WA6VKL
Rptrs: 147.24+; 146.85-; 442.475+; 145.60 Simplex —
K6GZK System.

Tehama County ARC
13620 Trinity Ave.
Red Bluff, CA 96080
Meets: 1st Wednesday/monthly — 7:00 p.m.
CDF Training Room

Tri-County Amateur Radio Association
P.O. Box 142, Pomona, CA 91769
Meets: 2nd Monday/monthly — 7:30 p.m.
Pomona First Federal S&L — Basement
399 N. Garey — Pomona

West Coast Amateur Radio Club
Fun Meetings—No Business
Meets 3rd Thursday/monthly—7:15 p.m.
Fountain Valley Elem. School • Fountain Valley, CA
Net every Thursday 7 p.m. • Repeater 145.440-

Yolo Amateur Radio Society
P.O. Box 659, Davis, CA 95617.
Meets: City Council Conf. Room.
23 Russell Blvd. First Tuesday 7:30 p.m.
Simplex 146.475

DELAWARE

Sussex Amateur Radio Assoc.
Delaware Technical Com. College, Georgetown
211 S.E. Front St.
Milford, DE 19963
3rd Wednesday/monthly — 8:00 p.m.

FLORIDA

Sarasota Amateur Radio Ass'n, Inc.
Meets: 3rd Tues./monthly — 8 p.m. on the 6th floor (board
room) of the County Admin. Bldg. corner of 301 & Ringling
Bld. Club Rptr. W4IE, freq. 146.91/31, open to all. Phone
patch *Up #Down. Welcome

ILLINOIS

Bolingbrook Amateur Radio Society
P.O. Box 495
Naperville, IL 60566-0495
(312) 420-0342 • Call in 147.93/33
3rd Monday/monthly — 7:30 p.m.

Chicago Suburban Radio Association (CSRA)
Clyde Federal Savings & Loan Assn.
7222 West Cermak Road
North Riverside, IL 60546
2nd Wednesday/monthly — 8:00 p.m.

Dupage Amateur Radio Club W9DUP
Mid-America Savings and Loan
55th & Holmes (55th St. near RT 83)
Clarendon Hills, IL • 4th Monday/monthly — 7:30 p.m.
(312) 971-1156 for more information

Fox River Radio League
Valley National Bank, Lower Level
Northgate Shopping Ctr. & RT. 31, Aurora, IL
(312) 898-2779 for more information
2nd Tuesday/monthly — 7:30 p.m.

Radio Amateur Megacycle Society (RAMS)
Meets: Irvingwood/Acacia Church
3900 N. Plainfield, Chicago, IL (8200W)
Mail to W9DY, (312) 625-2879
3rd Friday/monthly — 7:30 p.m.

Six Meter Club of Chicago - K9ONA
Rptrs. 146.37/146.97 448.300/443.300
Info net - Tues. 9:00 p.m. 146.37/97
Annual Hamfest 2nd Sunday in June
Santa Fe Park, Willow Springs, IL.

INDIANA

Fort Wayne Radio Club
Ron Koczor, K9TUS
P.O. Box 15127, Fort Wayne, IN 46885
The Salem Church
3rd Friday/monthly — 7:30 p.m.

Northeastern Indiana Amateur Radio Club
P.O. Box 745, Auburn Indiana 46706
Meets: 2nd Tuesday/monthly — 7:00 p.m. at members homes
Daily traffic net at 2300Z
on 147.96/36 MHz, the WB9VDK repeater

KANSAS

Sandhills Amateur Radio Club
Wheatland Electric Meeting Room
West Fullton Street
Garden City, Kansas 67846
1st Thursday/monthly at 7:30 p.m., 146.31-91

KENTUCKY

Kentuckiana Radio Club
Bill Richmond, WD4CPO, 637-8443
Louisville Red Cross Bldg.
Louisville, KY
Meets: 4th Saturday/monthly — 7:30 p.m.

MARYLAND

The Peninsula Radio Operators Society (PROS)
Family oriented activities — training and
exams held throughout the year.
Info net — K3NOQ/Rptr. 146.925 Tues. 1930 Local
P.R.O.S., P.O. Box 2315, Salisbury, MD 21801

MICHIGAN

South Eastern Michigan A.R.A.
Meets: 1st Fri./monthly 7:30 p.m. K8FC Rptr. 147.75/15
Grosse Pointe North High School
Building C, Cafeteria Commons
For info contact N8CDY (313) 885-5557

MISSISSIPPI

Miss. Coast Amateur Radio Assn. (MCARA)
P.O. Box 1785 • Tel: (601) 388-9232
Gulfport, MS 39502-1785
Meets: 3rd Monday/monthly
Harrison County Courthouse

MISSOURI

Heart of America Radio Club
American Red Cross
3521 Broadway
(816) 756-2365 x65
3rd Tuesday — 7:30 p.m.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG
P.O. Box 911, Dover NH 03820
(603) 742-0130/755-2600
2nd Sunday/monthly — 7:00 p.m.
Dover Dist. Court. Talk-in 147.57

NEW JERSEY

Gloucester County Amateur Radio Club (GCARC)
Woodbury V.F.W.
1st Wednesday/monthly — 8:00 p.m.
Woodbury, NJ • Talk-in 147.18/78
For info call K2JF (609) 589-2318

NEW YORK

Communications Club of New Rochelle, NY, Inc.
Harrison Street Firehouse
Bill McCarren, K2LV
(914) 738-0768
Meets: 1st Monday/monthly — 8 p.m.

Hall of Science Amateur Radio Club, Inc.
P.O. Box 131, Jamaica, NY 11415 — HOSARC — 2nd Tuesday/
monthly — Hall of Science Building, 47-01 111 St., Flushing
Meadow Park at 7:30 p.m. The tristates' only 3-band linked
rptr. system 144.300 S/223.600 — 1445.225 —

Radio Club of Junior High School 22 N.Y.C., Inc.
111 Columbia St. • New York, NY 10002
"At The Core of The Big Apple," QSLs invited.
For info contact WB2JKJ and "The Crew" learning
English thru Ham Radio at (516) 674-4072, 24 hrs.

Rockaway Amateur Radio Club
100th Precinct Police Station
Rockaway, New York
Berne Ross KO2F • (718) 634-2167
Meets: 3rd Tuesday/monthly — 8 p.m.

Staten Island Amateur Radio Assn. (SIARA)
P.O. Box 495, Staten Island, NY 10314-0020
Meets 3rd Friday/monthly — 8:00 p.m.
Rm. B-201, College of Staten Island, Sunnyside
Club Repeater — W2CWW/R — 440.325/445.325

Westchester Amateur Radio Assoc. (WARA)
Scarsdale Village Hall
Scarsdale, New York
Meets: 1st Wednesday/monthly — 8:00 p.m.
For info call B. Dubbs, Pres. (WA2FSR)(914) 725-1191

Westchester Emergency Communications Assn. (WECA)
147.66/147.06, 222.80/224.40, 447.475/442.475
Mtgs: 2nd Monday/monthly - 7:30 p.m. Little Theater
County Center, White Plains, N.Y. For further info write:
P.O. Box 131 N. Tarrytown, N.Y. 10591. Call (914) 631-7424.

NORTH CAROLINA

Cabarrus Amateur Radio Society (CARS)
Western Steer Family Steak House
1390 Hwy 29 North
Concord, NC 28025
3rd Monday/monthly — 7:00 p.m.

Raleigh Amateur Radio Society, Inc. (RARS)
P.O. Box 17124 • Raleigh, NC 27619
Meets: 1st Wed./monthly, 7:30 p.m. • First Presb. Church
Club net daily, 8 p.m. on RARS 04/64, W4DW
Annual Hamfest, 2nd Sunday in April

OHIO

Ashtabula County ARC
Ken Stenback, A18S (964-7316)
County Justice Center, Jefferson, OH
3rd Tuesday/monthly — 7:30 p.m.
County Repeater — 146.715

C.A.R.S. (The Clyde Amateur Radio Society)
Ervin Remaley, KA8CAS, Secretary
2nd Tuesday/monthly — 7:30 p.m.
Community Rm., City Building, Clyde, OH
Repeater 144.75/145.35

Northern Ohio Amateur Radio Society (NOARS)
K8KRG/WB8JBM • P.O. Box 354, Lorain, OH 44052
Meets 3rd Mondays/monthly — 8 p.m. at Gargus Hall
Info: George—W8ANM • (216) 933-2841
Ohio's largest general interest club.

OREGON

Oregon Tualatin Valley ARC
Beaverton Elks Lodge
3500 SW 104th Ave.
Beaverton, Oregon
2nd Wednesday/monthly — 7:00 p.m.

PENNSYLVANIA

Penn Wireless Assoc. Inc.
Falls Twp. Municipal Bldg.
Trenton Road
Fallsington, PA 19054
4th Monday/monthly — 8:00 p.m.

TENNESSEE

Middle Tennessee Amateur Radio Society
University of Tennessee Space Institute
Tullahoma, Tennessee 37388
(615) 455-0289 Call in — 146.10/70
Meets: 2nd Thursday/monthly — 7:30 p.m.

Warminster Amateur Radio Club
P.O. Box 113, Warminster, PA 18974
Meets: 1st Wednesday/monthly — 8:00 p.m.
at St. Johns Lutheran Church, Hatboro, PA
Net Wednesdays — 8:30, 147.09/69

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK)
Meets: 1st and 3rd Tuesdays
Salvation Army Community Bldg. • Hampton, VA
Operates 146/13 147/73 Repeater
For info call 480-2346 or 851-5573

WASHINGTON

Mike & Key ARC K7LED
Good Neighbor Center
305 So. 43rd Street
Renton, WA 98055
Meets monthly on 3rd Sat. - 10 a.m.

North Seattle Amateur Radio Club (NSARC)
Meets: 3rd Tuesday (except Jul. & Aug.) at the First
Interstate Bank, 30th Ave. NE and NE 125th St. (Lake City)
in basement. Info: Mike Jr., W7WHT, (206) 282-1438 or P.O.
Box 20279; Seattle 98102

WEST VIRGINIA

Jackson County Amateur Radio Club, Inc.
D. Geneal Bailey, NK8P, Sec.-Treas.
113 Winters Dr., Ripley, WV 25271
First National Bank of Ripley
Meets: 1st Thursday/monthly - 7:30 p.m.

WISCONSIN

Fox Cities Amateur Radio Club
Meets: 3rd Monday/monthly — 7 p.m.
Roosevelt Jr. High School • 318 E. Brewster St.,
Appleton, WI 54911. Talk-in 146.16/76
Contact Jack Bigelow, KA9JUL, (414) 766-3861

MARITIME MOBILE

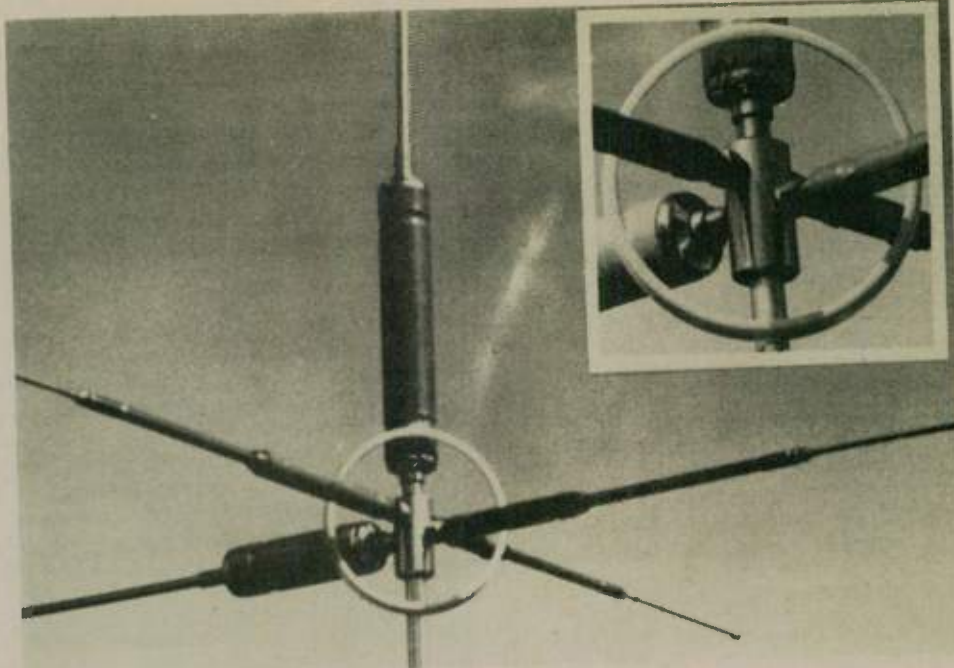
Gordon West,
WB6NOA

Mobile whips

For high-frequency Amateur Radio in vehicles, motor homes, and selected marine and temporary locations, the pre-tuned mobile whip antenna is a great way to get a good signal out.

High-frequency mobile whips are loaded to 1/4-wavelength on the frequency they are cut. On the 10-meter band, no loading is required if the whip is about 9 feet long. But for lower frequencies, a non-loaded 1/4-wavelength whip would simply be too long (i.e., 15M = 11 feet; 20M = 16½ feet; 40M = 32 feet; 75M = 64½ feet long!).

Different companies use different schemes for loading. HyGain™ Corporation years ago produced mobile whip antennas featuring base loading. I don't see these antennas offered anymore. The popular Hustler™ (Nutronics) whips are center-loaded with an adjustable stainless steel tip for precise tuning. Mobile Mark™ antennas feature helical loading



Four-band adaptors are available.

with maximum loading on the top of the antennas. Valor™ features center loading on their individual high-frequency antennas, and Valor, Mobile Mark and Spider™ multi-band mobile antennas feature predominantly top loading.

All mobile resonant whips depend on a good groundplane on which to be mounted for them to work well, regardless of type of loading and manufacturer.

Mounting a mobile antenna on a wood railing will lead to no-load-up. Same thing with a mobile antenna on the stern of a power or sailboat — it generally won't work unless there is a tremendous

amount of metal surface directly below the base of the whip. Mounting a mobile antenna on the side of a motor home will also lead to poor results if the majority of the whip does not extend above the roof.

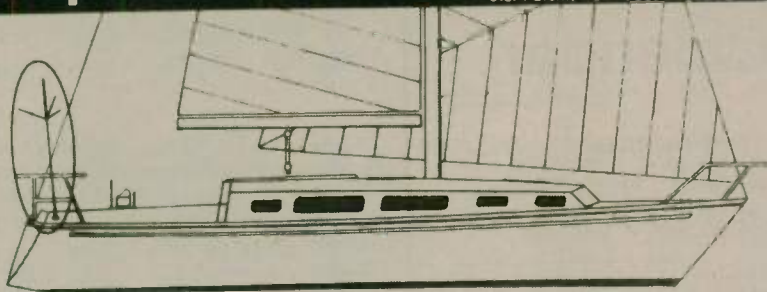
The best operating mobile pre-tuned whip antenna is one that is in the clear and above the groundplane, and one that has a tremendous groundplane below it. In vehicles, the ultimate would be to mount a pre-tuned mobile antenna smack dab in the center of your roof. Same thing with a mobile home.

On a boat, the antenna would work great if it were mounted inches above the sea water with copper foil extending into the sea water at the ground system. In a remote cabin or hidden away in your attic, a 1/4-wave pre-tuned loaded mobile antenna will work best when mounted on a big metal surface such as a metal air conditioner, aluminum-covered ducting or aluminum-covered insulation on the floor of the attic. Mobile antennas will only work well if they see the groundplane directly below their base.

The Hustlers are nice because they are inexpensive and can be easily tuned by simply adjusting the tip whip. The Mobile Mark antennas are nice because

The Spider Maritimer™ Antenna

U.S. Patents 4349825 4460895



The only amateur radio antenna made specifically for use on the ocean. Non-magnetic stainless steel mast and nickel-chrome plated bronze fittings make it virtually corrosion-proof. Operate on 10, 15, 20 and 40 meters without making any antenna changes. A resonator for 75 meters is available as an accessory. A special marine mounting fixture for deck use is also available.

For use on commercial marine frequencies add our Maritimer™ Adapter Collar and three special resonators. Choose from 8, 12, 16 or 22 MHz.

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CANOGA PARK, CALIF., 91303
TELEPHONE: (818) 341-5460

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KILO-TEC

P.O. Box 1001 • Oak View, CA 93022
Tel: 805-646-9645 • *Dealer/OEM inquiries invited

they are completely encased in fiberglass, and there's no way to get burned by touching the radiating element. However, to tune them, you need to remove the red cap and prune away the wire until you drop the antenna into resonance. I would also add that on any helical-wound antenna, make sure and cover the end of the coil wire because it becomes quite hot at RF frequencies and can literally roast the top of the antenna if not properly trimmed.

The Spider antenna is nice because it is easily tuned by moving a ferrite sleeve up and down the active top-loading coil. Since precise tuning depends on how the antenna is going to be mounted, there's no way the factory can pre-tune an antenna and guarantee that it's going to work exactly as it comes out of the blister pack. This is where you need to get out your antenna matching techniques!

If you don't have access to any sophisticated antenna matching meters, such as a grid dip meter or a noise bridge, you can find the resonant point of your mobile antenna by sweeping from the bottom end of the band to the top end of the band in AM at a low-power setting. Watch your SWR bridge for the characteristic dip, where the antenna is resonant. If you find that the antenna is resonant too low (which most are when they come out of the blister pack), you need to shorten the whip or take off a few turns of the helical coil to bring the resonant point higher. Continue this process until you see the dip in the middle of the band where you wish to operate.

On helical antennas, be sure and push down the exposed wire after you get through snipping off a few turns. Leav-



Mast-mounted dipole whips

ing the wire pulled out will undo the amount of wire off the coil you just cut!

If you sweep the band on low-power AM and don't see any dip in SWR at all, chances are you've either got the wrong whip for the wrong band, or your counterpoise is too small, or the ground system is too far away from the base of the whip. The ground system for most whip antennas must be no more than 3 inches away from the actual feedpoint where the coax goes into the mount.

If you mount a whip on a stainless steel stanchion on your power boat, and your groundplane system is the water tanks 15 feet away, chances are the whip won't load at all. If you mount the whip

on a side mirror on your motor home, chances are it won't see the groundplane directly below it, and it won't resonate.

You'll need to move the whip so that it is directly over the metal top of the motor home. If you're mounting the mobile whip antenna in the attic, you'll need to run copper foil to act as the groundplane directly below the antenna. You can run copper radials, 1/4-wavelength long, or develop a lot of copper screen directly below the antenna feedpoint. If your ground counterpoise is inadequate, the antenna simply won't load.

Running a wire between the base of your marine mobile antenna and a good water tank groundplane several feet away won't work either. The wire does not have enough surface area to bridge the groundplane connection, although you have a DC connection, you have little connection at RF frequencies that wish to see a lot of surface area within inches of the actual antenna base.

In marine installations, if you suspect a poor groundplane as the problem of an antenna not loading, wrap some copper foil around the base of the antenna mount and drop it overboard. If all of a sudden the antenna now resonates, you have found your problem — not enough groundplane directly below the base of the mobile whip.

Which brand of mobile whip works best? I've tried them all, and their performance depends proportionately on the amount of ground below them. The more ground, the lower the angle of radiation and the stronger your signal to a distant station.

The top helical-loaded whips tend to have a slightly broader bandwidth than the center-loaded whips. Multi-band antennas that have individual tuning elements coming out from the side tend to be more sharp on frequency resonance than individually tuned whips. The strong point for multi-band antennas is that you can change bands on your transceiver without ever having to go out and change whips. The RF energy automatically knows which resonator to go to.

If you're not satisfied with your present mobile antenna performance for high frequency, think about changing locations of the whip and improving upon your groundplane. I won't say that all whips are equal in performance, but I will say that adding additional groundplane directly below the whip will give you a dramatic improvement in range. □

Change of address?

If you are moving, we need to know your new address six to eight weeks before the address becomes effective.

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Kris Hass, KA0VIY

When I was 10, my brother earned his Novice license, and I enjoyed watching and listening to him tapping code. I wished I could be a ham, but I thought my disability would stop me. But dreams do come true!

Today I find myself on the air in spite of cerebral palsy which makes me unable to walk, talk or use my hands. I use a headstick to operate my station and a Commodore 64 computer.

After earning my ticket last August at HANDI-HAMS Radio Camp, the task of figuring out how to set up my station so I could operate it began. This took a long time (well, it seemed like a long time to me). First, that wait for a loaned transceiver from HANDI-HAMS, then problems with my brother's old antenna made my brother and Dennis — my one-to-one — and other hams stop working on it. Finally at Christmas, my folks got me a Butternut antenna. I also got an interface for my computer and a Kantronics Hamtext.

I was able to get on the air, but because of my laziness in developing my ear to copy code in my head, a member of the local ham club loaned me her Yaesu to see if it was better for me to operate with an automatic antenna tuner. I could operate it better, so after a few QSOs my folks decided to buy me a Yaesu FT-757GX with an automatic antenna tuner. It has push buttons and the knobs are easy to turn, so I am totally independent.

My one-to-one did make two modifications. One was an additional key on my computer so I can preprogram messages and call them up by pushing a single button instead of two. Then he made a box with buttons, which plugs into the mic hole that changes the frequency.

I might add a word of caution about interfaces, if you are about to get one to copy code. I have tried about four interfaces and I think I finally got a good one (Kantronics). Your best bet is your head because the QRM and QRN screw up your copy on the monitor. □

Cerritos

(continued from page 1)

N6IHQ, working packet and Dick Sams, WN6B, on 2 meters. Dick had been there for many hours that day, as well as the day of the accident. We also noted that Joe Provenza, W6UPN, was involved, as were Russ Solomon, WA-6DUC and Ford Cox, K6DQZ. Dozens of others, whose calls are not available at this time, assisted the operation.

Members of the media were there in abundance, of course, and several of them stopped by to see the Amateur Radio operation. One of the officers from the sheriff's department told us that he had suggested to members of the media as they arrived that they be sure to look in on the hams while doing their interviews. It was later learned that he was Officer Bob Bingham, N6IKQ, who, in addition to his numerous duties, was doing a little "P.R." for Amateur Radio.

On Monday afternoon, September 1, Nick, W6HRD, received a telephone call at home from the shelter requesting assistance in obtaining food supplies. He and Paul Barron, N6DWR, drove to the shelter to assess the situation. They were told that a call had just been received from the manager of a Ralph's Supermarket advising that he could furnish some bread for those staying at the

shelter. Nick and Paul drove to the market. The manager contributed not only about 25 loaves of bread, but also 25 dozen eggs, 25 gallons of milk and about 12 gallons of punch.

There remains much to be done before those who lost their homes and their loved ones can begin to function normally again. One woman said, however, that she was "overwhelmed by the love and caring shown all of us."

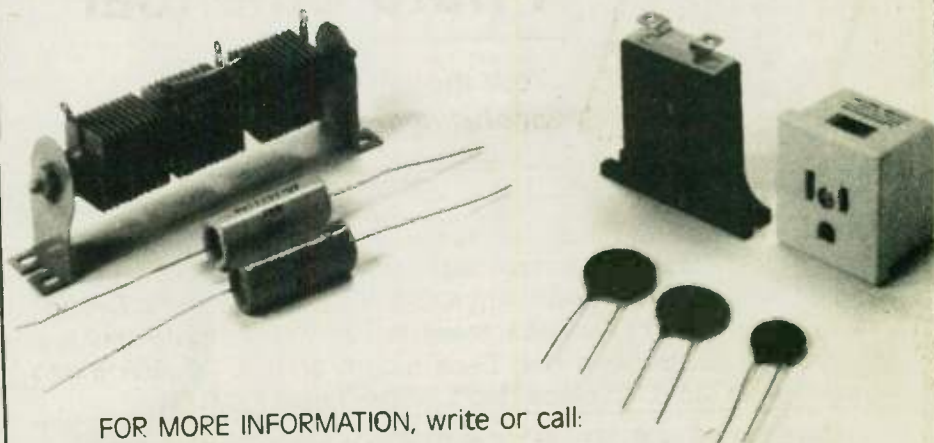
Hundreds assisted in the operation: the County Sheriff Department personnel; personnel from various police departments; from numerous fire departments which were called upon to control the many fires in the burning homes; the ambulance services; the Red Cross, whose people were wonderfully helpful (and many of whom were hams); and, of course, the hams themselves, dozens of whom dropped everything and reported to the area in order to assist in any way they could.

One of the persons in charge of the shelter commented to one ham: "We could not have done it without you." And one Red Cross official announced to another ham that as soon as the emergency was over, he intended to enroll in a class so he could obtain his ticket! □

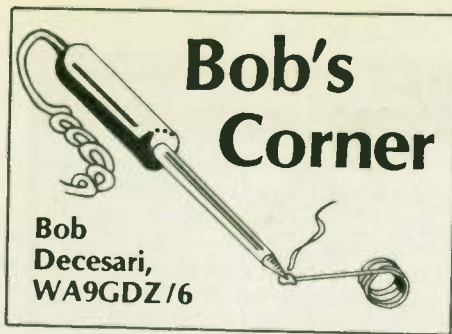
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The GDZ Special

A low-cost 5-band HF antenna system

Although much has been written about multi-band antenna systems, few of the antennas equal this one in simplicity. Actually, the only other article describing a similar antenna that I have ever run across appeared in the late 1960's ARRL Handbooks. This article was the basis for the antenna to be described, although I have improved its operation substantially with a simple antenna tuner. However, before we get into the construction of the system, let's take a look at some antenna basics.

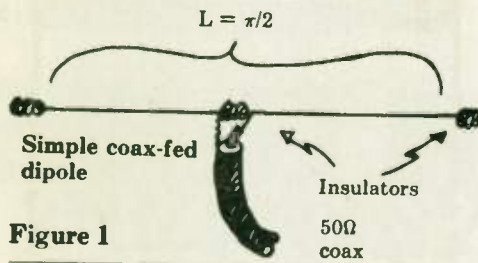


Figure 1

As most of us know (or should know if we have an amateur license!), a simple dipole antenna exhibits an impedance of about 70 ohms at its center feedpoint. In the '30s and '40s, it was not uncommon to find dipoles fed with 75 ohm twin-lead feedline as the match was almost perfect. However, with the standardization

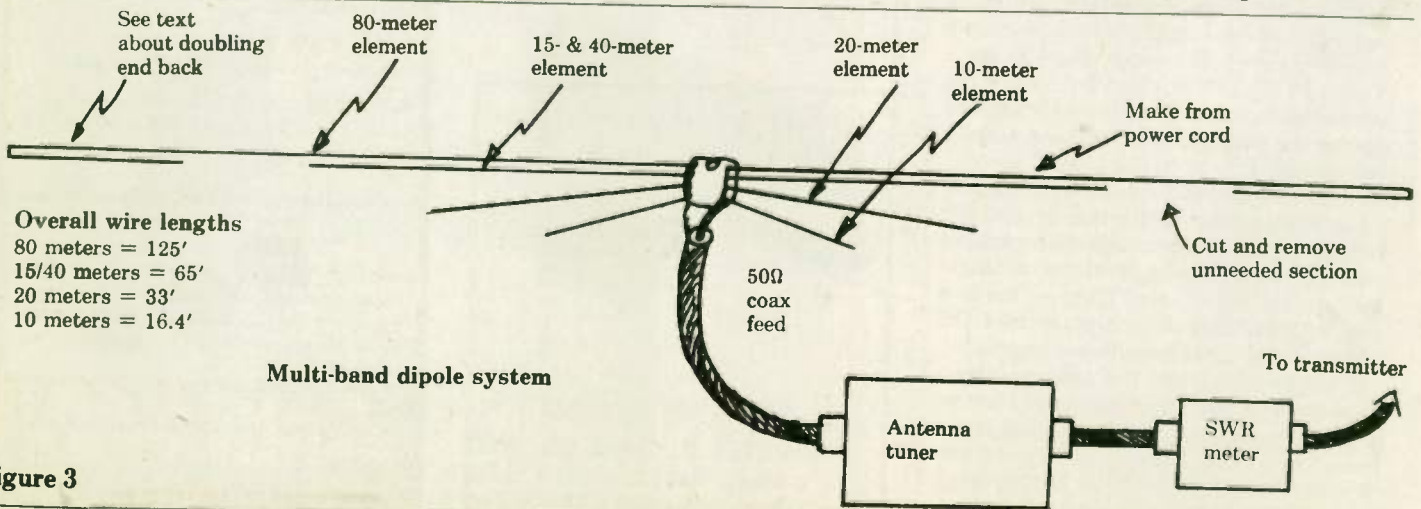


Figure 3

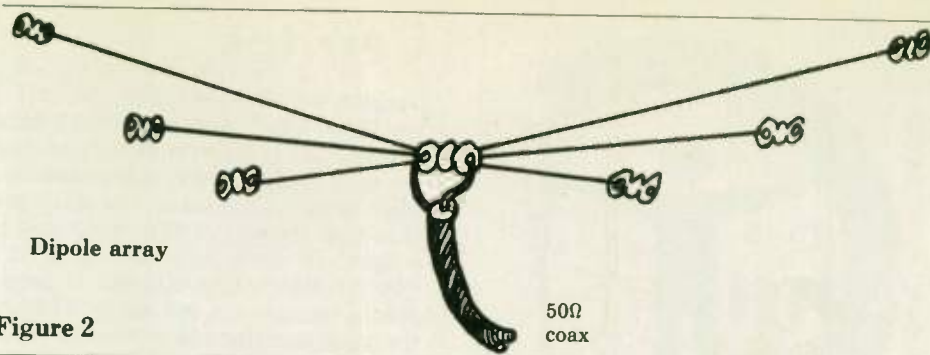


Figure 2

of 50 coax, the slight mismatch presented by the dipole fed with 50 ohm line is almost unnoticed. Hence, we say loosely that a dipole offers a 50 ohm feedpoint impedance and we feed them directly from either RG-58 or RG-8 coax transmission line.

Figure 1 illustrates this simple antenna. For the most part, this simple antenna will work the best at its resonant frequency. At other frequencies, the feedpoint impedance changes, causing a mismatch and the SWR to increase. It is possible, however, to operate a dipole at three times its design frequency; such is done when a 40-meter dipole is operated at 15 meters. This is because electrically the voltage and current distribution along the antenna are the same at 21 MHz as they are at 7 MHz.

If we were to take the basic dipole and add another dipole connected at the same feedpoint, except that the second dipole is cut to resonate at a different frequency, the feedpoint impedance of the first dipole at the designed frequency would no longer be 50 ohms. It would be some complex value that could be calculated after several beers and a few headaches of work.

However, the fact remains that we would have two separate antennas, each resonant to a specific frequency, and exhibiting some awful complex impedance at the feedpoint. Furthermore, we could add additional resonant dipoles, all connected to the same feedpoint, and really make a mess of the feedpoint impedance!

Figure 2 illustrates the array.

Now, how do we match this creation with all of the resonant arms attached to a single feedpoint? This is where what I call "transmission line black magic" occurs. We will make use of the theory of conjugate matching to allow us to use this multi-resonant antenna in the real world. Although the theory of conjugate matching is well out of the scope of this article, we can say reasonably accurately that the complex impedance presented at the feedpoint is combined with the impedance of the transmission line at the operating frequency to form an even further complex impedance at the other end of the coax! To put it simply, we use an "antenna tuner" to cancel the various inductive and capacitive reactances generated by this creation. Actually, the term "antenna tuner" is really inaccurate, as a tuner is really presenting an alternate impedance value to the transmission line which cancels all of the horrible reactances generated by our creation! However, if I called it a "conjugate matching device," no one would know what I was talking about. So we will call it an antenna tuner!

Enough theory. Let's build the creation just described. The antenna I have been using for about five years is illustrated in Figure 3. However, before you get too far along in the wire cutting, let me just say that it performs only as good as a dipole. That is, you will not get gain out of it, and you will not necessarily be the strongest signal on the 20-

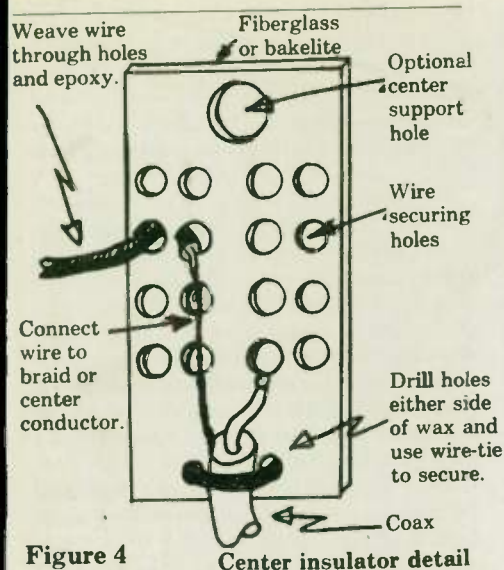


Figure 4 Center insulator detail

meter band. Most people who run dipoles on 20 meters generally don't make the DXCC club anyway! But the antenna system will allow you to operate on the HF bands, and if made properly and suspended in a high location, it will give a good account of itself.

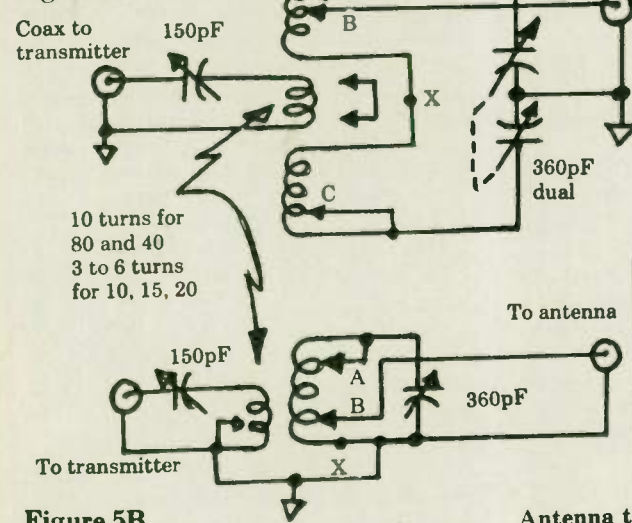
ments. As it turned out, I ended up doubling back the 80-meter dipole section in order to contain the antenna within my property. This is illustrated in Figure 3. However, if you have the space to stretch out the 80-meter section without doubling it back, I would recommend doing so.

The 10- and 20-meter sections were also fabricated out of power cord. These sections were separated since I wanted to orient the elements north and south for best east/west performance. Although I haven't tried it, I don't see why additional elements couldn't be added for the new WARC bands as well.

Figure 4 shows how the various dipoles and coax are connected at the center. I highly recommend a good dielectric at RF frequencies, such as bakelite or epoxy-glass circuit board material without the clad. Some plastics, such as PVC, are very lossy at HF and should not be used for this application.

As stated previously, use of a conjugate matching device, or antenna tuner, is necessary for best operation and low SWR readings. Figure 5A illustrates the (please turn to page 51)

Figure 5A



Coax to antenna

Approximate tap positions

	A-X	B-X
80	10T	7T
40	8T	4T
20	4T	2T
15	3T	1T
10	2T	1T

Figure 5B

I have been especially pleased with its performance on 40 and 80 meters as I have worked DX on these bands with this antenna system. Best of all, if you have a reasonably well-stocked junk box, or if you have about \$25 to invest, this system can be made at this cost or lower.

On my system, all of the individual dipoles are made from standard 110 volt AC power cord! The length of each element is calculated by the formula:

$$\text{Length (feet)} = 468 / \text{frequency in MHz}$$

For the 80- and 40-meter elements, I didn't bother to separate the power cord pair but simply cut the 40-meter section to length and removed the unused seg-

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HXH

A recent ARRL bulletin reminded traffic handlers that the proposed handling instruction HXH has not been adopted by the ARRL and so should not be used. HXH was proposed to mean, "If undeliverable as addressed, cancel message and do not send service message to originator."

There has been some strong opposition to this proposal from several traffic handlers, and the National Traffic System (NTS) staffers have not endorsed it. The objection is that HXH would represent a lowering of our standards: traditionally any message that gets into the system is supposed to be delivered or a service message sent to the originator, so that you can assume a message is delivered unless you hear otherwise. In addition, there is a fear that amateurs' efforts to deliver other traffic may also suffer if HXH is adopted.

The proposal originated as a result of problems encountered in fair traffic, where large volumes of messages are received from the general public, often with guessed-at or incomplete addresses. Sometimes overworked operators get things wrong too, and a big stack of undelivered messages results. If we go by the rules, there will be an equally big stack of service messages coming to the originator — probably several days after the show station is dismantled, and its operators are now unable to do anything about the traffic, to furnish correct addresses or phone

numbers as the senders can no longer be reached.

Traffic people say HXH is not the solution, but rather better organization of the show station. Get the name, address and phone number of the sender of each message, and keep it on file with the message itself. It may well be halfway across the country, but get it anyway. Then, if a service message comes you can contact the sender either to ask for better address, to say the message cannot be delivered, or to ask permission to cancel the message. If the sender is not within the local telephone area, send a radiogram. It may well change the sender's opinion of Amateur Radio from one of skeptical amusement ("Uncle Bill never got the message; I didn't think he would, but at least the kids had their fun") to one of respect for serious communicators who spare no effort to deliver traffic. Amateur Radio can use all that kind of public support it can get.

The gang at Newington

For 90% or more of amateurs, the paragraphs above are likely of little interest. Perhaps 90% would be even closer to the truth. Indications are that traffic handlers form a very small minority in the amateur ranks. And perhaps that's one reason so many amateurs do not belong to the ARRL. Why join an organization whose very name indicates it's traffic-oriented — the American Radio Relay League? Hey, wait a minute: that name could apply just as well to repeat-ers!

Others may not be members because they resent actions by League officials, whether volunteer or paid, like the one mentioned in the first paragraph of this month. The feeling is, "Who do they think they are up there in Newington, telling us what we may and may not do? Only the FCC has authority to do that! If I want to use HXH I'll use HXH!" "Or the way they use the word *official*, as though they were some kind of potentates up there!"

In any organization the size of ARRL with a large paid staff, the staffers may

be tempted to feel that they *are* the organization; the rest of us only belong to it. They are in contact with it every day and are being paid to run it, and so feel more qualified than the members to determine what is best for the organization.

The ARRL staffers I have known don't fit this pattern, as a general rule. They realize that it's quite possible many amateurs actually devote more time to Amateur Radio than they, the professionals, because much of a staffer's time may be occupied with administrative details only remotely connected with actual amateur operation, while the members out in the boondocks spend their time on the air.

It is for this very reason that the ARRL has advisory committees of amateurs not employed by ARRL and not members of the Board of Directors, to provide input from the field. These committees cover most aspects of Amateur Radio, DX, emergency communications, VHF, awards, contests. Traffic questions are discussed by what is equivalent to an advisory committee, the three NTS area staffs — Eastern, Central and Pacific. While these committees are advisory, their advice carries much weight with the headquarters people, and also with the board of Directors, and their advice is usually followed.

If you don't like the League's policy in any matter, you're wasting your time if you only gripe about it to other hams who can do no more than you about it. You make yourself even less able to do anything about it if you quit or don't join the League because you don't like what the League says . . . or does. (Why should the Board or ARRL headquarters listen to you if you aren't even a member?) You accomplish nothing if you vent your frustration by tuning up on top of a net or on top of W1AW, and you could lose your ticket and a few hundred bucks if the FCC catches you. Complaint to the appropriate committee, to your Director, to ARRL headquarters, or to all three if you feel strongly about it; and if you have companions in misery, get them to do the same. It may not work, for — after all — there must also be some people in favor of what you don't like or it would have never been adopted, but this option is more likely to succeed than any of the others mentioned.

Free emergency power

Many of us would like to have standby power to operate our stations when commercial power is unavailable, but are frightened by the price tag. Or maybe we try to get by with a battery-powered rig and have to do without the operating conveniences and the more familiar operation of the regular station equipment. Maybe we dream of having a generator big enough to run the whole

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house when commercial power fails, but obviously that's beyond our reach. Wait, maybe it isn't. It's even possible to get it free. And from the power company, too.

Your electric bill represents mainly three items of expense: 1) administrative costs, which are covered by the minimum bill; 2) capital costs, generating plant, transmission lines, substations, distribution systems; 3) fuel costs. Large power users have items (2) and (3) billed separately, with a demand charge based on the highest kilowatt load during the month, and the energy charge based on the total kilowatt-hours used during the month. Residential customers usually have items (2) and (3) combined, with the demand charge factored into the rate by the sliding scale, a higher price being charged for the first 50, 100 or whatever kilowatt-hours per month.

The demand charge is there because the size of everything from the generator to the meter on your house depends on how much electricity you use at your peak load. If the highway department has a drawbridge that's opened only four or five times a month, the wires must be just as big as they would have

to be if it were opened 10 times a day.

An important fact about peak loads is that to a large extent, everybody's peak is likely to come at the same time. An exceptionally hot day, for example, will result in all the air conditioners and refrigerators running wide open, and it is those peaks that make it necessary to build new power plants (\$100 million or so), run additional transmission lines (maybe \$100,000 per mile), add more substations (\$50,000 and up). Anything that can reduce those exceptional peaks are money in the utility's pocket.

Many utilities have arrangements with large power users, giving them a reduced rate if they agree to reduce their load during such peaks, and they also give reduced rates to residential customers who agree to allow the utility to turn off water heaters and air conditioners at such times.

I'm located at an institution that has such an arrangement. We have several generators to supply standby power and we switch to standby power when notified by the electric company. Our rate is much lower for that reason; our bills are about half what they used to be. But they installed a special kind of meter that measures our demand only during

their peak load times. The power we take during that time costs us \$13 per kilowatt; at other times it's only \$2 — quite an incentive to run the generators, as otherwise the bill might have a \$2,000 or higher surcharge tacked on for the next six months.

How do you go about getting the free generator? Obviously you can't go to the electric company and ask them to give you a generator and expect to get one, but you can get them to pay for one. An individual amateur probably wouldn't have much success in negotiating such a deal — it would cost the utility more than it would be worth; but a club might be able to swing it for its members, particularly if someone has contact with the right people in the utility's organization, and many clubs do have such people, or at least have someone who knows someone who can help.

Reminding the officials of the public service value of Amateur Radio might smooth the way, too. Anyway, it doesn't hurt to ask. The worst they can do is say no. If the answer is yes, you'll have your generator paid for by what you save on your electric bills. In our case, the special rates are paying off the cost in a little over a year. □

Bob's Corner

(continued from page 49)

schematic for this tuner. I used an old Air-Dux coil that I had in the junk box. If one is not available, find a 3-inch cardboard roll and wind one with 16 AWG bare wire. Tapping is done with small copper-plated flat-tipped alligator clips available from Radio Shack. Allow enough space between coil turns if you are winding the coil, so that the clips don't short between turns. My tuner was built in such a fashion so that I could use it to match balanced or unbalanced transmission lines.

If you are not planning to use it for balanced loads, the circuit of Figure 5B should work as well. I used a dual 360pF variable capacitor which was salvaged off an old tube radio for the tuning capacitor. This may be a hard component to get these days and I would recommend searching at local swapmeets or surplus stores for something even close! Although the capacitor plate spacing is close, they seem to handle 200 watts of RF without too much difficulty. The other variable capacitor is an old Hammarlund 150pF unit, although any 150pF air variable will work in this case.

Tune-up should be done at low RF power levels to minimize QRM. Although I have shown my tap positions, experiment with your particular installation to find the best positions for coil and capacitor. I have been able to achieve less than 1.5:1 SWR readings on all five of the major HF bands. Note

that the SWR bridge is placed between the transmitter and the tuning unit. Also note that the system utilizes the 40-meter radiator on 15 meters, as was talked about previously.

This antenna system, although simple, will give a good account of itself and can be built at low cost over a weekend. It can be configured as a sloper or a flat-top. Get it as high as possible in any case, as with all dipoles! I would be interested in hearing from anyone who


puts elements on it for the new WARC bands. It sure beats having separate coaxes running under the window for each antenna in the antenna farm!

Who is this guy anyway???

By now, some of you might have noticed that this is the third article written by WA9GDZ in *Worldradio*. Hopefully, there will be many more of them to come, each with some simple weekend construction project. Professionally, Bob Decesari is an engineer with a penchant for writing. Some of you might have seen him on the cover of *QST* in September of 1980 with his patented portable quad antenna and feature story.

Author of 11 technical papers in the area of underwater vehicle electronics and several short articles, Bob combines his writing with Amateur Radio, in which he has been active for over 25 years. Between running his business, Radio Engineers, keeping his old Porsche running, and numerous electronic and woodworking projects, he loves the sea and spends as much time as possible sailing offshore California. □

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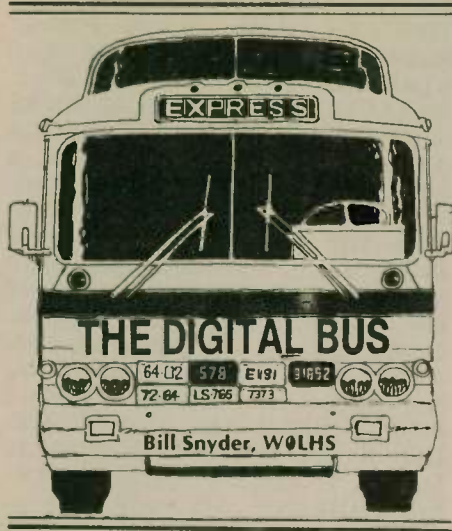
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Is your ham shack starting to look like an Amateur Radio museum? Do you find you are collecting more and more electronic equipment that is out-of-state-of-the-art-date? Mine is, so I assume I am not alone in this wonderful world of dits and bits. When I look at the shelves (two) of stuff on my operating bench I see a TS-940, a Sanyo 885 computer, a Yaesu 726 for OSCAR, a Titan amplifier and a Robot 800HC as the basic operating package. It's all good stuff and I've had many hours of operating fun with it all.

However, in the next room is a growing pile of out-of-date electronic goodies that are as good today as the day they rolled off the assembly lines, but alas, they were left behind by technology. For example: I have a National SW-3 receiver that I paid \$13.30 (with one set of 40-meter coils) for in 1934. I filled a number of logbooks with that three-tube regenerative RX. I worked a lot of CW DX on it too. I also have a HQ-129 RX from 1946.

Unfortunately, I did not keep the Collins gear that followed the HQ-129, nor did I keep any of the home-built transmitters I had so much fun with in the early days. I sold them all. But I did keep the first RTTY tuning unit I built. It weighs about 50 pounds, and is complete with polar relays, boat-anchor power supply and machine-engraved name plates.

Also in the outdated pile is an AMTOR controller, a TAPR TNC-1 clone and a TNC-2 with PM-1 tuning unit. And the reason all this relatively new stuff is in the pile is because I have had the use of a Packratt-232 from AEA for a beta test period, and I couldn't part with it when the test period was over.

The nice thing about the PK-232 is everything is in one package: Morse, RTTY, AMTOR and packet radio. I first saw the prototype at Dayton and I was impressed. Many of my friends have the PK-64, but I had to take the C-64 off my bench and abandon AMTOR when I installed an IBM clone computer to run a packet bulletin board operation. I didn't have desk space for it.

So, now, with the PK-232, I'm back on AMTOR after a year and a half absence. After one exploratory contact with a W5 station, I tried chasing DX. Just like the early AMTOR days when I would contact G3PLX (with only an attic antenna), I hooked a good ragchewer in Italy. Then I worked John Walker, VK3JW, a friend of many years. I had forgotten how good an AMTOR contact can be in marginal conditions.

One of the purposes of beta testing is to locate "bugs" by putting a product into the hands of ordinary run-of-the-mill appliance operators like me. Of course, the manufacturers put beta test units with real technical experts, too, before they are released for sale.

When Mike Lamb, N7ML, offered me a beta test machine, he cautioned: "We have a professional writing team working on the instruction manual, but so far we can only send you the chapter that contains all the commands to run it." Well, when I opened the package I dis-

covered 137 pages of commands and a page of "hook-up" instructions. Many of the commands are different than those which run the TAPR TNC-2, so it did take a little time to get acquainted with the new mnemonics required to run the unit.

The PK-232 is not menu-driven like so many of the digital units, but neither are the TAPR TNC's. After about two weeks, AEA shipped me a new PROM and the first edition of the instruction manual. It is the best operating book I have seen on any of AEA's line of equipment. The writers did an excellent job on the 286-page manual. I'm sure any newcomer to the digital world will have no trouble figuring it all out, although it will take some time to read it all. And I suggest you read it before you get out the soldering iron and hook up the connections to your rig.

I've been using a TAPR TNC-2 and a PM-1 tuning unit on my HF bulletin board. The PM-1 really makes high-frequency packet as good as it can be. The PK-232 has the same tuning unit built in, and in addition to the PM-1 LED style tuning indicator, it has oscilloscope outputs for more precise tuning indication. The LED's, however, work just fine. I had no trouble tuning packet, RTTY or AMTOR signals by using the LED indicator on the front panel.

The PK-232 has outputs for either positive or negative FSK operations and I find this works just dandy. On my TS-940, I have been using either FSK or SSB to work RTTY. I like the FSK method because it allows all the CW filters and VBT controls to be used on RTTY. This helps in contest conditions.

I compared the Packratt-232 to my venerable old Robot 800 by hooking them both to the TS-940 at the same time. The Packratt has a 200 Hz shift, whereas the Robot is set for 170. I wondered about this difference when I was read the advertising for the AEA product. When copying weak signals, the two compared very favorably. Once in a while the 200 shift would make a better copy, and vice versa. But by-and-large,

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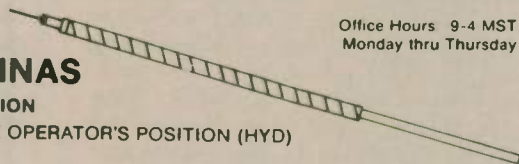
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they both made very readable copies on S-1 signals.

On packet, both VHF and HF, the performance is fine. The PK-232 has a front panel switch that changes the output from radio 1 to radio 2. Two commands change the baud rate and the VHF shift. So it is easy to go from 2 meters to HF in seconds.

For your computer to talk to the Pack-ratt, you must use a communications program similar to those that drive a telephone MODEM. I tried several, but my favorite is YAPP (Yet Another Packet Program) by Jeff Jacobsen, WA7MBL. It is available from K7PYK for \$5. If you like it, a donation of \$20 is requested. That is the way shareware programs work.

Jeff's program was written for packet purposes, so it is pretty basic. It features printer toggle, capture file, binary file, transmission and an excellent monitor review. I recently got the latest version and Jeff added a connect call sign file to speed things up.

The PK-232 has a fine collection of LED indicators that give you a quick reference as to what is happening inside the blue box. The 21 lamps work on AMTOR, RTTY, Morse and Packet. Most of them do double duty. For example, one will tell you if are connected on packet or latched on AMTOR. The ARQ, ERROR, PHASE and TRAFFIC lights will keep you informed as to what is happening on the chirping mode of communications.

All in all, I like the PK-232, even if it made museum pieces out of more equipment in my shack. (P.S. I bought it!)

FO-12 satellite

For the past year I have been working on getting up a new satellite antenna system. I was stopped last November by a snowstorm which lasted for four months. The day I got it going was the day OSCAR-10 went on the fritz. Although it has been back on limited operations, I have not had much chance to use it.

When the Japanese satellite FO-12 (JAS-1) went up in August, I checked in the SSB net from Goddard Space Center and listened to the launch broadcast from Japan. It was very exciting!

On the FO-12's orbit #3 I worked W6MFO on CW. Then some LID manager came on and told us it was not open for traffic, so I quit until the AMSAT telephone bulletin board passed the word the bird was available.

All this brings up this observation: Here we are, a bunch of communicators who have shrunk the world to a tiny apple, but we haven't got a central network of high-speed news dissemination that works much faster than the pony-express. I have advocated for many years that the ARRL place RTTY and Packet bulletin boards, loaded with the latest news, on our ham bands.

With band conditions as erratic as they have been I have had trouble copying the RTTY W1AW bulletins. One day they are 40 over 9, the next day at the same time, down in the mud at S-1. Many times I have to wait till Saturday to get the DX bulletin from W2QFR, a New York Official Bulletin Station. But that is life in the world's best hobby, I guess.

Eavesdropping

"I WENT TO A ONE-KNOB ANTENNA TUNER SEMINAR." ... "THE FLEA MARKET WAS A REGULAR BOAT-ANCHOR SHOW." ... "CQ CQ CQ - WISHING TO WALTZ WITH MATILDA TODAY." ... "ONE OF THE PROBLEMS WITH RUNNING A WELL-MANAGED BULLETIN BOARD IS THAT IT GETS A LOT OF USE." ... "KEEP YOUR ANTENNA COOL AND DRY." ... "I'LL WORK YOU ON AMTOR IF I CAN EVER FIGURE IT OUT." ... "I'M HONORED TO WORK YOU, I HOPE I CAN MERIT A QSL CARD." ... "I CAN TYPE 70 WORDS A MINUTE SO I CAN KEEP AHEAD OF THE BUFFER, AND I AM ALSO A WINDBAG." ... "YOU ARE RST 599 IN THE WETT INDIES." ... "3C0A CREATED A BOILING BAND ALL BY HIMSELF." ... "THE JOB HERE IS AN ELECTRO-NAUT, I FIX ELEVATORS." ... "TH SKYWIRE IS A MUSHCRAFT BEAM." ... "HIS BRAG TAPE READS LIKE THE WANT-ADS IN QST." ... "RUNNING 50 WATTS BARE-BREADED." ... "CQ CQ CQ TEXAS FOR W.A.S." ... "I'M RETIRED BUT NO PUTRIFIED YET." ... "QTH IS PISA, THE CITY OF LEANING TOWERS." ... "WENT

TO A CARNIVAL IN THE BIG TOWN OF DUCK CREEK (POP 11 SOULS)." ... "THE WOODY HAS STARTED TO CRY, ME TOO." ... "GRACIAS, ADIOS, BUENAS NOCHES, SALUDOS A LA FAMILA AND WORK HARD." ... "HAVE A NICE WEEKEND STARTING WEDNESDAY." ... "THE HONEY-DO'S ARE NOW ORDERS, NOT REQUESTS." ... "YOUR LUCKY YOUR RIG IS IN THE BEDROOM, MINE IS RELEGATED TO THE BASEMENT." ... "I'M 68 YEARS OLD AND I DON'T BUY GREEN BANANAS ANYMORE." ... "IT HASN'T BEEN ANY FUN, I WAS HIT BY A DRUNK DRIVER. IT DIDN'T HURT THE BIKE, THOUGH." ... "AGE IS 32. WOULD LIKE TO RETIRE IN ABOUT FOUR YEARS." ... "RTTY IS GREAT BECAUSE I DON'T NEED MY HEARING AID." ... "I'VE COMPLETED MY DOCTORATE IN MEDEIVIAL STUDIES BUT I CAN'T SEEM TO SPELL IT." ... "MUST QRT FOR LIGHTNING IS ONLY A BLOCK AWAY." ... "ALL THE BEST FROM THE WORLD'S OLDEST AND LARGEST FOSSIL FIELD." ... "I HIT THE WRONG KEY AND DUMPED MY MUFFER." ... "I DON'T KNOW IF ITS OHMS LAW OR MURPHY'S THAT IS CAUSING MY PROBLEM." ... "JUST OPENED THE SHACK AND AIRED IT OUT, FIRST TIME IN WEEKS." ... "IT'S SO DRY HERE THERE ARE BULLFROGS THAT ARE THREE YEARS OLD AND DON'T KNOW HOW TO SWIM YET."

Here are a few odds and ends: AB6C is (please turn to page 58)

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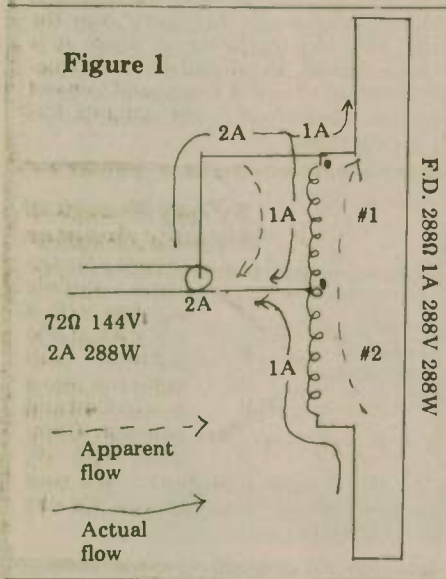
Aerials

Theories of the 1-to-1 trifilar and the 4-to-1 bifilar baluns at the antenna

Gordon Beeman, W9RCS

Apparently no such theories have ever been published, so here are two logical theories. Even though the ordinary concept of alternating current and voltage becomes somewhat obscure at RF, it can be used to illustrate many circuits and is so used in this article. For the sake of theory, losses will not be considered.

The 4-to-1 balun is simply a broad band auto transformer. It provides a 2-to-1 voltage (4-to-1 impedance) stepup, a balanced output and prevents the coax feedline from unbalancing a balanced antenna.



An instantaneous current flow could be as shown in *Figure 1*. It can be seen that coil 1 is the primary and coil 1 in series with coil 2 is the secondary and that 2 amp would appear to flow down through coil 1 at the same instant that 1 amp would flow up through coil 2 and coil 1. According to auto transformer theory, the current in the part of the coil common to primary and secondary is the difference between the two currents, so there's only 1 amp primary current in coil 1. There is no secondary current in coil 1.

Coil 1 becomes an open switch to sec-

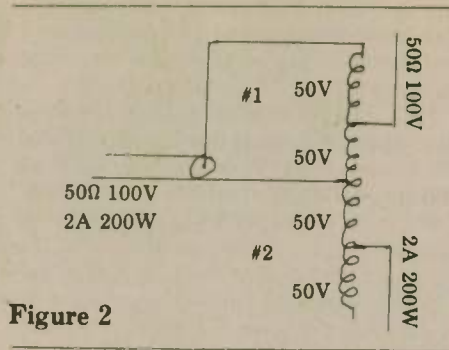


Figure 2

ondary or load current and the use of this "open switch" will be shown. Also to the center taps we have *Figure 2*. It in keeping with auto transformer theory in any auto transformer part of the load current is conducted and part is transformed (if the ratio is other than 1-to-1). Thus, one amp at 144 volts flows directly to the load (antenna) and in series with 1 amp 144 volts induced in coil 2 produces 288 watts antenna power, 50% being conducted and 50% transformed (in this case).

How this balun prevents antenna currents (RF) on the feedline will be shown with the 1-to-1 balun as the theory is the same.

If the 1-to-1 balun was developed by simply center-tapping coils 1 and 2 of

the 4-to-1 balun and connecting a dipole can be seen that the lower half of coil 2 is of no use, so it can be discarded and we have *Figure 3*. This balun is also a broad band auto transformer and its sole function at the antenna is to prevent the coax feedline from unbalancing a balanced antenna (i.e., prevent coupled RF on the outside of the feedline).

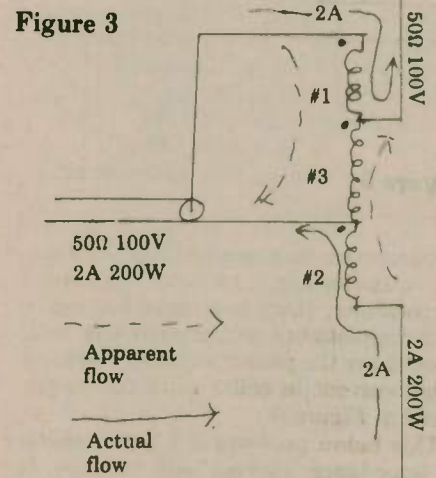


Figure 3

In *Figure 3* it appears that 2 amp would flow both ways at the same instant in coil 3. According to auto transformer theory, these two currents cancel each other, and there is no current flow in coil 3 which becomes an open switch to load current. This is "pictured" in *Figure 4*, where it can also be seen that coils 1 and 2 have equal current in opposite directions, so coil 1 cancels the inductance of coil 2 and vice versa. Thus, coils 1 and 2 become so much transmission line (intended to match the transmission line) as far as load current is concerned.

Figure 5 shows that there is no transformer action and all load current is conducted as in any 1-to-1 auto-

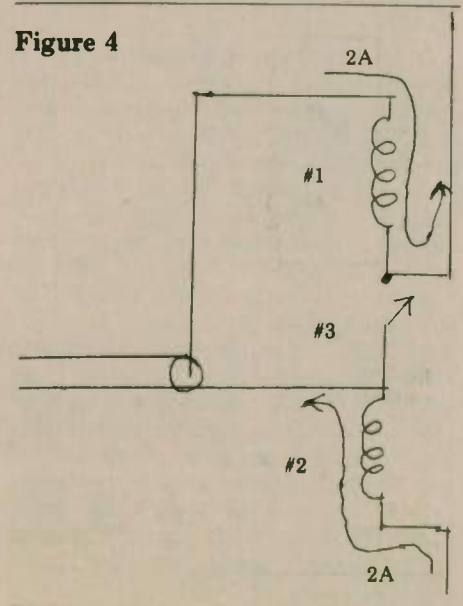


Figure 4

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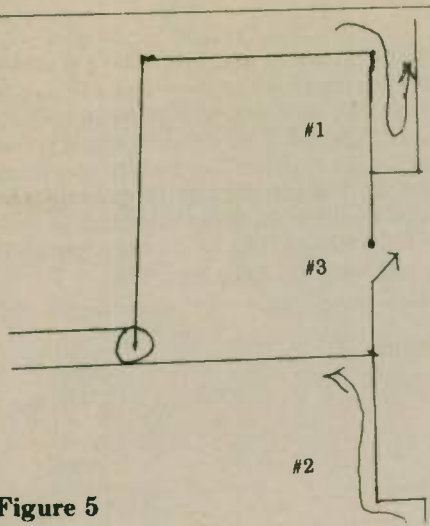


Figure 5

transformer; thus, we have an unloaded transformer. In any unloaded transformer, there is a small resting or core magnetizing primary current, coils 1 and 3 are the primary and so there is a small current in coil 3 after all, as pictured in Figure 6.

This balun provides a 1-to-1 transfer of impedance, current and voltage. It does not, as a function, provide a balanced voltage to the antenna. The voltage at the antenna terminals would be the same and of equal and opposite potential to ground or neutral without the balun.

How this balun prevents coupled RF on the feedline can best be shown by drawing the baluns in Figure 7. If the coils are each rotated 90 degrees clockwise with no change in connections, we have Figure 3.

In Figure 7 it can be seen that the coupled RF from the right half of the antenna is of equal intensity but opposite phase to the coupled RF of the left half of the antenna. If these two currents reach the braid of the coax, they will cancel. However, they are in phase in

coils 3 and 2 and so their magnetic fields add and are reinforced by the magnetic field due to the resting current in coils 1 and 3, which are of the same magnetic direction.

Thus, the counter electro-motive force developed chokes off the flow of coupled RF on coils 3 and 2, preventing antenna currents on the outside of the feedline. Coils 3 and 2 become RF chokes as far as coupled current is concerned. This is the balance provided by the balun. The antenna is balanced to the outside of the braid of the feedline. Each half of the antenna is connected equally to the braid of the feedline as far as coupled currents are concerned. The load current is not likewise connected because coil 3 is an open switch to load current.

Figure 8 shows the 4-to-1 balun likewise drawn to show how it prevents RF on the feedline. If the coils are rotated 90 degrees clockwise with no change in connections, we have Figure 1. The coupled currents are in phase in coils 1 and 2 so their magnetic fields add and are strengthened by the magnetic field due to the resting current of coil 1. Thus, coils 1 and 2 become RF chokes as far as coupled currents are concerned and choke off such currents.

The antenna is balanced to the outside of the braid of the feedline. Each half of the antenna is connected equally to the braid of the coax as far as coupled currents are concerned. The load current is not likewise connected because coil 1 is an open switch to load current. Thus this balun acts much like the 1-to-1 balun in preventing RF on the feedline.

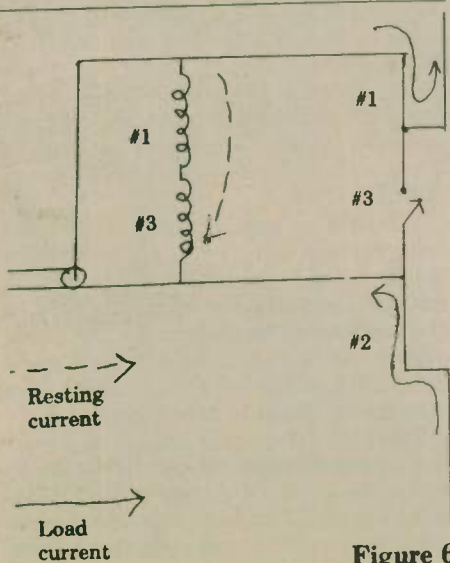


Figure 6

Spider Antennas and Adapters

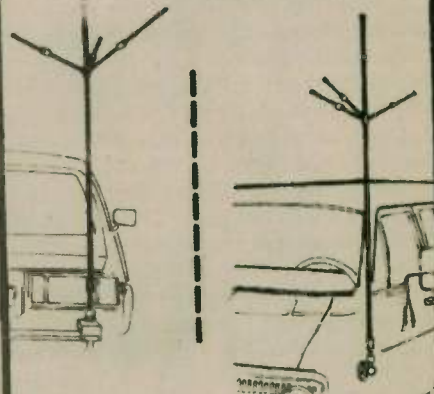
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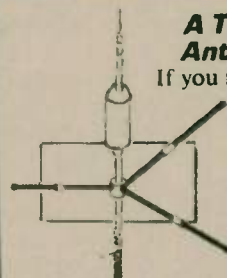
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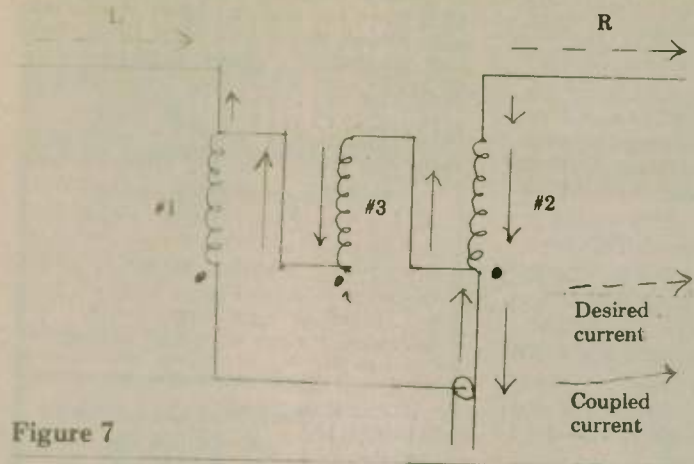


Figure 7

Thus is the mystery of the balun allayed, by tried and accepted concepts, and so be it.

BRUCE A. RAY COMMENTS:

Author Beeman has an excellent description of how the balun transformation works. The IEEE dictionary defines balun as a passive device used to couple a balanced device to an unbalanced device. It says nothing about

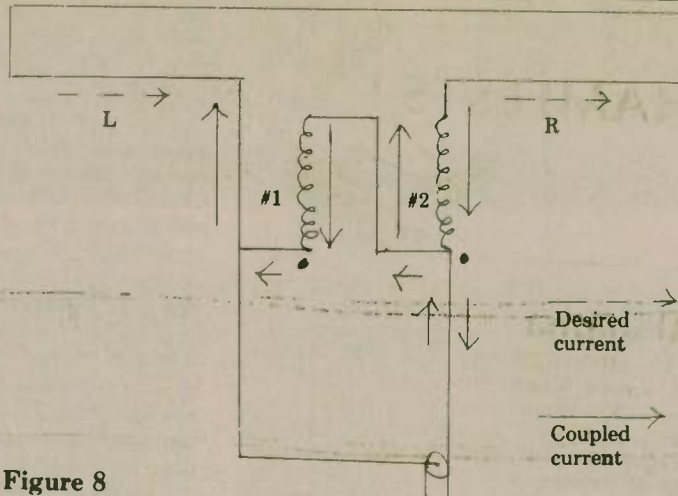


Figure 8

keeping RF off the coax lines.

In antenna practice, radiated RF from both halves of a balun-fed dipole, for example, will appear on the shield of a coaxial line without harmful effects. This is due to the fact that the currents are equal but opposite in phase, thanks to the balun.

The balun is a very useful device in providing balance current between the unbalanced coaxial cable to the balanced center-fed dipole antenna, thus preventing conducted current flow between one side of the dipole and the coax shield. Its use provides better radiation patterns, antenna gains and VSWR values. □

Silent Keys

Irvin Dickinson, W6WA

Irvin E. Dickinson, W6WA, a well-known radio amateur and broadcasting pioneer in the Sacramento (California) area, passed away on August 18, from a heart attack at the age of 79 in a local hospital.

A native of Bakersfield, California, he served with the U.S. Navy in the mid-1920's as a radio telegrapher, and with the Army Air Corps during WWII.

In 1932, he began working in the broadcast industry, first at radio station KERN in Bakersfield as an engineer, then later — in 1935 — for station KMJ in Fresno, where he worked as chief engineer, announcer and a member of the McClatchy Broadcasting Company Engineering Department, engaged in radio consulting and construction of broadcasting stations.

After completing military service in

WWII. Irv returned to McClatchy Broadcasting as a field engineer for Sacramento in 1945 and served as technical director and director of engineering for that organization until his retirement in 1972.

Besides being an old-time radio amateur (he was a top-notch, high-speed CW operator), he was also a member of the Institute of Electrical and Electronic Engineers (IEEE), the Society of Wireless Pioneers (SOWP), the Masons (Tehama Lodge No. 3 F. & A.M.), the Scottish Rite Bodies, Ben Ali Shrine, the McClatchy 25 Years Club, the Snoopers Motorcycle Club, and the Old-Timers Ham Radio Breakfast Club.

He was also a member of the North Hills Radio Club and the River City Amateur Radio Communications Society. He is survived by his wife, Maxine, and a son, Bowen, both of Sacramento. He was truly a radio pioneer, and will be remembered by his many friends in the amateur fraternity and in the radio broadcasting industry. — Paul L. Wolf, W6RLP □

Richard Bischoff, W0GA

The Iowa-Illinois ARC here in Burlington, Iowa wishes to pay tribute to Richard A. Bischoff, W0GA, who became a Silent Key June 20, 1986.

Dick was first licensed on February 8, 1938 as W9QVA. His first station was a home-built transmitter and a hallicrafters receiver. The long-wire antenna he used was put up by some friendly hams

because Dick was afflicted with rheumatoid arthritis and walked with canes.

In the late '30s he was a radio operator for the National Youth Administration (NYA) and handled traffic for the local area from the NYA state headquarters in Des Moines.

During World War II, Dick was the radio officer for the local Civil Air Patrol and he taught radio classes for them.

In post-war 1946 he was licensed as W0QVA. In 1952 he received his Extra Class and in 1968 he got his 2-letter call, W0GA.

Dick was active on CW traffic nets, particularly the Iowa Tall Corn Net. As a member of the ARRL since 1937 he has held OBS, RM, EC, OO, and was a member of the A-1 Operators Club. His other on-the-air activities included RCC, WAS, WAC, DXCC, and Code Proficiency 30 wpm. Dick also received many other net certificates and public service awards. He was a member of the Old Timers Club, Professional Loafers, and HANDI-HAMS.

W0GA has been a member and has held various offices in the local radio clubs. As the Public Relations Officer for the Iowa-Illinois ARC, he handled the paperwork for the annual Field Day events. As a service to the club members, Dick prepared a local area Amateur Radio operators directory.

Teaching many radio classes and helping numerous individuals, Dick represents the spirit of Amateur Radio. He will be missed but he will also be remembered as a model for all of us in the Amateur Radio community.

— Iowa-Illinois ARC □

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HAMFESTS



Alabama

The MONTGOMERY ARC will host the 9th annual Montgomery hamfest and the South Net annual convention at the Civic Center in historic downtown Montgomery, October 25 and 26. Free admission, free parking, all indoors, including flea market. Flea market set-up begins at 6 a.m.; doors open to the public from 9 a.m. to 4 p.m. Central. FCC exams on site, both days; code testing begins at 8 a.m. with all parts of written exams beginning at 9 a.m. Bring a copy of your current license and \$2.

Talk-in on 146.24/84; call W4AP. Ragchew 146.04/64, 147.78/18, 449.50/444.50. Flea market reservations are not required. Hotels/motels nearest to hamfest site are The Madison, (205) 264-2231 (in Alabama (800) 356-1744) and The Sheraton Riverfront Station, (205) 834-4300.

For further information, write to Hamfest Committee, c/o 2141 Edinburgh Dr., Montgomery, AL 36116, or phone Phil at (205) 272-7980 (after 5 p.m. CST or any reasonable hour on weekends and holidays).

Illinois

The Rockford Hamfest Computer Fair and ARRL Illinois State Convention, sponsored by the ROCKFORD HAMFEST ASSOCIATION, will be held November 16, from 9 a.m. to 3 p.m., at Forest Hills Lodge, 9900 Forest Hills Road, Rockford, Illinois.

Doors will open at 8 a.m. for flea market exhibitors; 8-foot tables are \$5 each (including two chairs). Commercial booths available. Tickets are \$3 in advance, \$4 at the door.

ARRL speakers and forums, Amateur Radio and computer exhibits, exams, door prizes, food and beverages, and free parking. Ground entry — no stairs.

For more information or reservations, contact Gary Hilker, K9LJN, 804 Otto Rd., Rockford, IL 61111; (815) 654-3282.

Indiana

The ALLEN COUNTY AMATEUR RADIO TECHNICAL SOCIETY will present the 14th Annual Fort Wayne, Indiana Hamfest on Sunday, November 9, at the Allen County Memorial Coliseum on Coliseum Boulevard (U.S. 30). All indoors, 450 tables available (an increase of 100 tables over previous years). Dealer setup begins 5 a.m. Doors open 8 a.m. to 4 p.m. General admission \$3.50 advance, \$4 at the door with children 11 and under free. Tables \$10 each (AC power extra). Premium tables (along the wall, curtain backdrop and free AC power) \$25 each. Plenty of parking on paved lot (the Coliseum charges \$1 to park).

Women's activities in a new, larger area.

Forums. Banquet held Saturday night. Motels and restaurants nearby. VE examinations given Saturday, November 8, with advance registration only.

Talk-in on 146.28/88.

For more information or reservations contact AC-ARTS HAMFEST, P.O. Box 10342, Fort Wayne, IN 46851. For information only, contact Bernie Holm, K9JDF, Hamfest Chairman, at (219) 485-0164 between 6 p.m. and 10 p.m. EST. No reservations accepted by telephone.

Massachusetts

The HONEYWELL 1200 RADIO CLUB — sponsor of 147.72/12 repeater, and the WALTHAM AMATEUR RADIO ASSOCIATION — sponsor of 146.04/64 repeater, will hold their annual Amateur Radio and electronics auction on Saturday, November 22, at the Honeywell plant, 300 Concord Road, Billerica, Massachusetts Exit 27 off Route 3. Snack bar and bargain parts store. Doors open at 10 a.m. Free admission and parking.

Talk-in on both repeaters.

For more information, contact Doug Purdy, N1BUB, 3 Visco Road, Burlington, MA 01803.

Michigan

The OAK PARK HIGH SCHOOL ELECTRONICS CLUB presents its 17th annual swap 'n' shop on Thanksgiving Sunday, November 30, at Oak Park High School, in Oak Park, Michigan.

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Let your computer test you before the license examination. FCC Amateur License Pool Questions. Complete multiple choice answers. Computer generated questions. Keeps running score (percentage) so you know how well you are doing. User friendly. For IBM PC/XT/AT and PC "look alike" using DOS 2.1+ also Apple II+, IIe, & IIc having 128K of memory using ProDos or Apple Dos 3.3.

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Donation is \$2. Tables (8-foot) are \$8 each. Refreshments and door prizes.

For more information, contact Oak Park High School, 13701 Oak Park Blvd., Oak Park, MI 48237.

Minnesota

The 2nd Annual Hamfest Minnesota and Computer Expo — sponsored by the TWIN CITY FM CLUB — will be held at Richfield High School, 7001 Harriet Ave. S., from 7:30 a.m. to 3 p.m., Saturday, November 1. Admission is \$3 in advance, \$4 at the door. Special guest speaker is Wayne Green, W2NSD. Two-hour DX seminar; FCC exams; expanded indoor flea market; commercial booths; food; door prizes; ARRL, AMSAT and computer seminars, and much more.

Talk-in on 16/76.

For more information or advanced registration, send an SASE to: Hamfest Minnesota and Computer Expo, Box 555, Minneapolis, MN 55440; or Lyle Vogt, KA0UDL, 5130 Willow Ln., Minnetonka, MN 55345.

Missouri

The SOUTHSIDE ARC of Grandview, Missouri will hold its annual hamfest at Grandview Senior High School from 9 a.m. to 5 p.m., Sunday, October 26.

Amateur exams for Novice through Extra will be given at 9:30 a.m. Send 610 form plus \$1 to: Rick McLeod, 1603 Richmond, Pleasant Hill, MO 64080.

Talk-in on 147.72-12.

For information, contact SSARC, P.O. Box 412, Grandview, MO 64030; (816) 987-3936.

New Jersey

The WEST ORANGE REPEATER CLUB announces its annual hamfest, to be held Sunday, November 16, at The Orange Elks, 475 Main Street, Orange, New Jersey.

Hamfest lasts from 9 a.m. to 3 p.m.; doors open at 7 a.m. for sellers. Admission is \$3. Tables are \$10 each. Door prizes and refreshments.

Talk-in on 224.80 and 146.550.

For more information and/or ticket reservations, call Mike or Rob at (201) 674-0507.

Pennsylvania

The RF HILL ARC will conduct its 11th annual hamfest on Sunday, November 2, at the Pennsylvania National Guard Armory, PA Route 152, Sellersville, Pennsylvania.

Doors open for dealer set-up at 6 a.m., and for buyers at 8 a.m. Refreshments will be available on-site. Admission is \$4 per ham, with accompanying non-ham spouse and children admitted free.

Dealer space is \$8 per 8-foot-wide by 6-foot-deep space inside and \$6 per 8-foot frontage outside. Dealers must provide their own tables.

Talk-in on 144.71/145.31, Almont, PA; 146.28/146.88, Hiltown, PA; 146.52 simplex locally.

To reserve space, contact Frank Benner, W3BRU at (215) 257-2450 or write HAMFEST CHAIRMAN, RF Hill ARC, 523 Vine St., Perkasie, PA 18944.

(please turn to next page)



Australian Ladies' ARA Contest

All licensed operators throughout the world are invited to participate in the Australian Ladies' Amateur Radio Association Contest Saturday, November 8.

Operating time is from 0001 UTC to 2359 UTC. The object of this contest is PARTICIPATION. YLs can work everyone, OMs work YLs only. This is a combined phone and CW contest.

Suggested frequencies: CW — 28.100-200, 21.100-200, 14.050-060, 7.010-020, 3.525-535; Phone — 28.480-520, 21.180-200, 21.350-370, 14.180-200, 14.280-300, 7.100-120, 3.570-590.

Operation: Phone and CW operation: Each station may be counted twice on each band for credit, once on phone and once on CW. All contacts must be made in accordance with operator and station license regulations. No net or list operation, no crossmode.

Procedure: Phone — call "CQ ALARA CONTEST". CW — call "CW TEST ALARA".

Exchanges: ALARA member — RS or RST, serial number starting at 001, ALARA member, name; YL non-member or OM — RS or RST, serial number starting at 001, name.

Scoring: Phone — 5 pts. for ALARA member contacted, 4 pts. for YL non-member contacted, 3 pts. for OM contacted, CW — Double all points for CW contacts; SWL — 5

pts. for ALARA member logged, 4 pts. for YL non-member logged.

Logs: Single log entry (but Australian YL Novices entering for the Mrs. Florence McKenzie CW Trophy should indicate their CW score separately also). Logs must show date/time UTC, band, mode, call sign worked, report and serial number sent, report and serial number received, name of operator of station worked and points claimed.

Logs must be signed. Logs also to show full name, call sign and address of operator, and show final score (points claimed). Logs must be legible — no carbon copies. No logs will be returned. Decision of the Contest Manager will be final. Logs must be received by the Contest Manager by December 31, 1986.

Contest Manager: ALARA, 31 Cadell Street Wentworth 2648, N.S.W. AUSTRALIA; or P.O. Box 4, Middle Brighton, Victoria 3186, AUSTRALIA.

A trophy will be awarded for the highest aggregate score over five years (commencing 1983) of a licensed YL operator (not necessarily Australian).

Mrs. Florence McKenzie CW Trophy: This will be awarded to the Australian YL Novice operator with the highest CW score (not necessarily an ALARA member). Minimum score 50 pts. The actual trophy, because of the size and weight, will not be forwarded to the winner, but a certificate bearing a photo depicting the trophy will be sent to the winner each year.

Certificates will be awarded for the following: Top score overall, Top score Australian YL Novice CW (Mrs. McKenzie certificate), Top score ALARA member in each country and VK call area, Top score YL non-member on each continent, Top score OM on each continent, Top score SWL on each continent, Top score VK Novice, and Top score overseas YL Novice CW.

(Mrs. Florence McKenzie, 1892-1982, was the first woman in Australia to take out a transmitting license — in 1921. She passed the Amateur Operator's Certificate of Proficiency in 1925 and obtained the call sign 2GA

(later VK2FV). Mrs. Mac taught Morse code to thousands of people, particularly service personnel during the 1939-45 war years. In 1984, the Townsville ARC kindly donated a trophy in her memory.) □

Oceania CW QRP

The 1986 Oceania CW QRP Contest, sponsored by the CW Operators QRP Club, will be held November 15-16. Operation will begin at 0000Z November 15 and end at 2400Z November 16.

Mode: CW only
Call: CQ QRP

Bands: 1.8-28 MHz (not WARC)

Sections: QRP — Single Op./Single Band Single Op./Multi-Band, Multi-Op./Single Band, Multi-Op./Multi-Band; QRO — Single Op./Single Band, Single Op./Multi-Band; SWL — Multi-Band, Single Band.

Period: Full period is 48 hours, Half period is any 24 consecutive hours within the 48-hour period.

Power output: QRP — 5 watts max.; QRO — over 5 watts.

Scoring: QRP — up to 1 watt, 5 pts.; between 2 and 3 watts, 4 pts.; between 3 and 4 watts, 3 pts.; between 4 and 5 watts, 2 pts. QRO — over 5 watts, 1 pt. QRO to QRP only. SWL — each QRO station logged in test, 1 pt.; each QRP station logged in test, 3 pts.

Logs: Must contain a minimum of 10 entries to qualify for entry to test. **Multipliers** — Every contact in a different ITU Zone counts as a multiplier on each band. **Bonus** — Field stations multiply grand total score by 2.

Conditions: Contestants may work each other once per band in each 24-hour period. All entrants, please use separate log sheet for each band. Each logged QSO to show date, time GMT, station worked, RST exchange, multiplier, power output, points claimed and grand total. The grand total score is derived from the total points from all bands × total multipliers from all bands × bonus score.

Entries: All entries must have summary sheet showing miscalculation of grand total score, name and QTH, call sign and signature. Include usual contest declaration.

Certificates: Awarded to highest score in each of the following categories, for 24- and 48-hour periods: QRP — Single Op./Single Band on each band; Single Op./Multi-band; Multi-Op./Single Band; Multi-Op./Multi-Band. QRO — Single Op./Single Band; Single Op./Multi-Band. SWL — Single Band, Multi-Band.

Deadline: Address entries to Contest Manager, Len O'Donnell, 33 Lucas Street, Richmond, S.A. 5033, AUSTRALIA, no later than December 29, 1986. □

Digital Bus

(continued from page 53)

the QSL manager for UA0JV (quick service, too). Warwick Latham, ZL9AFH, is back on Campbell Island. Thanks to W7VFR, JA1DSI, W0LYM, W0HAH, K0MNY, K7APO and all those unsuspecting souls that produced this month's eavesdroppings. Drop me a line. I like to hear from you. 73 de Bill Snyder, 1514 South 12th St., Fargo, ND 58103. DIT DIT. □

CaGen Software
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Virginia Beach, VA 23452

Carey — W4HIR
Gene — N4BRA

C-64

Ham Radio Applications

C-64

The CaGen CONTEST LOG — is a rapid-action (machine language) program for the C-64 & 1541 disk drive, with optional printer. It handles up to 2500 QSOs per disk file, producing a permanent log and dupe sheet for all contest situations. Duping is very speedy, with audio & screen notification of status. Only call and exchange information are entered by the operator. It offers many more features — see June 1985 issue of 73 Magazine for a complete review. \$35

NEW! CaGen SUPER DUPER — as its name implies, is a machine language program which provides IMMEDIATE dupe notification when the RETURN key is depressed after entering a call sign. It handles up to 2500 QSOs per disk file. You have to see it to believe it! If, after purchasing this program, you find a program for the C-64 that will handle 2500 QSOs and can be proven to us to be faster, we will cheerfully REFUND YOUR MONEY! \$35

NEW! CaGen UNIVERSAL LOG — is also a machine language logging program designed for all general logging applications. It is flexible in format, allowing for use in tracking 10-10, County Hunters, net members (great for NCS operations), general logging of daily QSOs or tracking awards progress. Its appeal is in fast retrieval and the ability to "key" searches on call sign plus any other single log item (such as name, 10-10 number, net membership number, etc.). You control its format, and its uses are limited only by your imagination. \$35

PLEASE INCLUDE YOUR CALL SIGN WITH ALL ORDERS. VA residents add 4% sales tax. No postage & handling charges to U.S. & Canada (overseas — \$4.00 for Airmail). Ham clubs — 10% discount on orders of 5 or more programs (mix or match). For more detailed information regarding our programs, please send SASE.

NEW PRODUCTS

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

ATV downconverter

P.C. Electronics has added a GaAsfet ATV downconverter for the new 33cm (902-928 MHz) band to their line. Just as is used in their 70 and 23cm ATV downconverter, a dual gate GaAsfet is used in both the RF preamp and mixer stage for low noise and wide dynamic range. A varicap VCO tunes the whole band down to TV channel 3 (2 or 4 can also be used if channel 3 is used in your area by a strong broadcast station). Total conversion gain is around 25dB, which is more than enough to reach the noise floor with most TV sets, even if one wants to remote the downconverter at the antenna to get the most sensitivity.

The new band will provide relief for ATVerS in those high population density areas that are plagued with interference from radar, geophysical survey locators and other mode users in the 70cm 420-450 MHz band. Parts and equipment should be more available, and less expensive, than going up to the 23cm band due to cellular and business band radios right

Hamfests

(continued from previous page)

Ohio

The MARION ARC will hold its 12th annual Heart of Ohio Ham Fiesta on Sunday, October 26, from 0800 to 1600 hours at the Marion County Fairgrounds Coliseum. Large parking area, door prizes, food. Tickets \$3 in advance, \$4 at door. Tables \$5.

Check-in on 146.52 or 147.90/30.

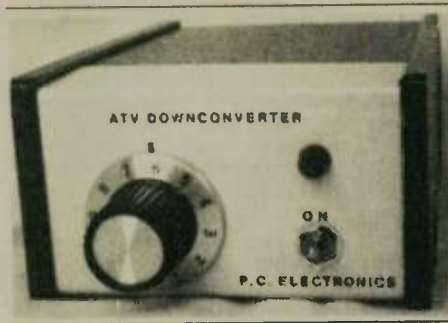
For information, tickets or tables, contact Ed Margraff, KD8OC, 1989 Weiss Ave., Marion, OH 43302; (614) 382-2608.

The MASSILLON ARC will sponsor "Auctionfest 86" on November 16, at the Massillon K of C Hall off Route 21, from 8 a.m. till 5 p.m. Sellers set-up at 7 a.m.

Admission is \$3.50 advance and \$4 at the door. Many tables available at \$7 per 8-foot space. Refreshments available and sit-down dinner. Plenty of free parking. Auction starts at 11 a.m.

Talk-in on W8NP, 147.78/18.

For advance registration and information, contact MARC, P.O. Box 73, Massillon, OH 44646. SASE please.



next door to the new 33cm band. Path loss is a little less, too.

The model TVC-9G is ready to go in the cabinet, shown with a wall mount 120VAC to 12VDC power supply. Just add antenna, coax and your TV set. Antenna input is a BNC connector, and the TV output is type F. The shielded cabinet is 4" x 2.5" x 7".

For those who want to package their own, the TVC-9 is available as a wired and tested

Chicago BBS

Announcing a new Chicago area Amateur Radio computer BBS. Call the Elk Grove Village TBBS computer bulletin board at 529-1586. This board operates 24 hours a day at 300/1200 baud, 8 bit word length, 1 stop bit and no parity. There is a completely separate sub-board dedicated to Amateur Radio. Featured on that sub-board are monthly electronic editions of the *OSCILLATOR*, *The ARRL Letter*, *The W5YI Report*, *The Gateway Packet Newsletter*, hamfest information general Amateur Radio news, and a message system.

board. Size is 2" x 4". With the on-board regulator, the power requirement can be anywhere from 11 to 18VDC at 30mA. A 10K trim pot is used for frequency tuning and can be removed. Three wires run to a panel type. To save the feedline loss at 900 MHz, the TVC-9 board can be placed in a weatherproof enclosure at the antenna, and common RG6 TV coax run to the shack. P.C. Electronics also has the DC decoupler (model DCD), and remote control box (model DCB) for tuning and powering up through the channel 3 downconverter output.

For more information on the TVC-9 and TVC-9G, or similar ATV downconverter for the 70 and 23cm Amateur bands, call P.C. Electronics at (818) 447-4565, or write to 2522 Paxson Lane, Arcadia, CA 91006.

They also have the new Tonna 23-element antennas for 900 MHz, and ATV transmitting modules are in the works. The TVC-9 module is priced at \$69 and the ready-to-go TVC-9G is \$109, delivered UPS surface in the continental United States.

The board runs on the popular TBBS system. Designed for the TRS-80 group of microcomputers but compatible with all micros, you will find the TBBS software very easy to learn to use.

In order to have full access you must request registration through the System Operator (SYSOP) but when logging on as a new user or guest you will be able to view the Amateur Radio sub-board. After logging on, choose the option labeled The Yellow Pages. That will move you to the sub-board listings.

Bulletin editors are requested to announce this information in club newsletters and on club nets.

● Share your knowledge with your fellow amateur and Worldradio reader ●

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(602) 242-3515

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(415) 486-0755

Dick Smith Electronics
390 Convention Way
Redwood City, CA 94063
(415) 368-8844

Dick Smith Electronics
4980 Stevens Creek Blvd.
San Jose, CA 95129
(408) 241-2266

Dick Smith Electronics
1830 Westwood Blvd.
Los Angeles, CA 90025
(213) 474-0626

Ham Radio Outlet
2620 W. La Palma
Anaheim, CA 92801

Ham Radio Outlet
999 Howard Avenue
Burlingame, CA 94010

Ham Radio Outlet
2210 Livingston St.
Oakland, CA 94606

Ham Radio Outlet
5375 Kearny Villa Road
San Diego, CA 92123

Ham Radio Outlet
6265 Sepulveda Blvd.
Van Nuys, CA 91401

Henry Radio
2050 S. Bundy Dr.
Los Angeles, CA 90025
(213) 828-1234

The Radio Place
2964 Freeport Blvd.
Sacramento, CA 95818
(916) 441-7388

Shaver Radio, Inc.
1775A S. Winchester Blvd.
Campbell, CA 95008
(408) 370-6665

GEORGIA

Ham Radio Outlet
6071 Buford Hwy.
Atlanta, GA 30340
(404) 263-0700

MASSACHUSETTS

TEL-COM Communications
675 Great Road Rte. 119
Littleton, MA 01460
(617) 486-3400 or 486-3040

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Muskegon, MI 49442
(616) 722-2246

MISSOURI

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211 N. Main Street
Butler, MO 64730

OHIO

Universal Amateur Radio, Inc.
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Reynoldsburg (Columbus), OH 43068
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Continuing a great 66 year tradition, there are 3 new Callbooks for 1987. The North American Callbook, the International Callbook, and the Callbook Supplement bring you accurate up-to-date QSL information on over 900,000 amateurs throughout the world.

The 1987 North American Callbook lists the calls, names, and address information for licensed amateurs in all countries from Canada to Panama including the Caribbean islands, Bermuda, and Greenland plus Hawaii and the U.S. possessions.

The 1987 International Callbook lists the amateurs in countries outside North America. Coverage includes South America, Europe, Africa, Asia, and the Pacific area.

The 1987 Callbook Supplement is a new idea in Callbook updates. It lists the activity in both the North American and International Callbooks. Published June 1, 1987, the Supplement includes all the new licenses, address changes and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! See your dealer or order directly from the publisher.

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Publication: Callbooks - December 1, 1986
Supplement - June 1, 1987

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Contact Aluma Tower Company, Inc., 1643 Old Dixie Hwy. Vero Beach, FL 32961; (305) 778-0606. □



Surge suppressor

Kalglo Electronics Co., Inc. has announced its new UL(r) approved Mini-II plug-in surge suppressor.

This small affordable unit boasts capacities usually found only in much more expensive devices. The compact Mini-II responds in 5 nanoseconds, suppresses 13,500 pulse amps and has a capacity of 135.0 joules. Clamping starts at 150 volts (more than enough safety for delicate microprocessor power supplies), and its filtering circuit removes 41dB of "noise" at 10 MHz on common mode and 49dB on normal mode. Once plugged into a wall outlet, the unused receptacle receives the same protection as the two on the Mini-II, resulting in three protected outlets. The versatile Mini-II provides high-quality protection for myriads of applications, including plug-in computers, lab equipment, office copiers, work processors, stereos, TVs and lap-tops for those on the go.

For more details contact: Kalglo Electronics Co., Inc., 6584 Ruch Rd., Bethlehem, PA 18017-9359 USA; (215) 837-0700. □



World Time Clock

Azimuth Communications Corporation of Los Angeles announces a unique new World Time Clock, sure to be of interest to radio amateurs throughout the world. The new model WT-80 features digital readouts with both local time and world time in 24-hour Zulu mode.

Designed around a special microprocessor, the quartz clock operates from a single oscillator and features a 24-position slide switch to show world time in 24 cities worldwide. Universal/GMT time shows with the slider on London. DXers will find it easy to locate "the Gray Line" at any time of day. Date changes from time differences around the world and the International Date Line is shown + or - from the local date.

Easy to set. Daylight Savings Time is memorized on a city or zone basis with the push of a button. Complete with press-on light and snooze alarm, this clock is perfect for any ham station, DXpeditions or just plain international business travel. Comes complete with carry case and operates on two AAA penlight batteries that assure excellent battery life.

A regular \$29.95 value, Azimuth's introductory offer price through the mail is only \$19.95 plus \$1.95 for postage and handling (California residents add tax). To order or for more information, contact Azimuth Clock, 11030 Santa Monica Blvd., Suite 100, Los Angeles, CA 90025. VISA or MasterCard orders: call toll free 1-800-821-6842 National, 1-800-421-1061 in California. □



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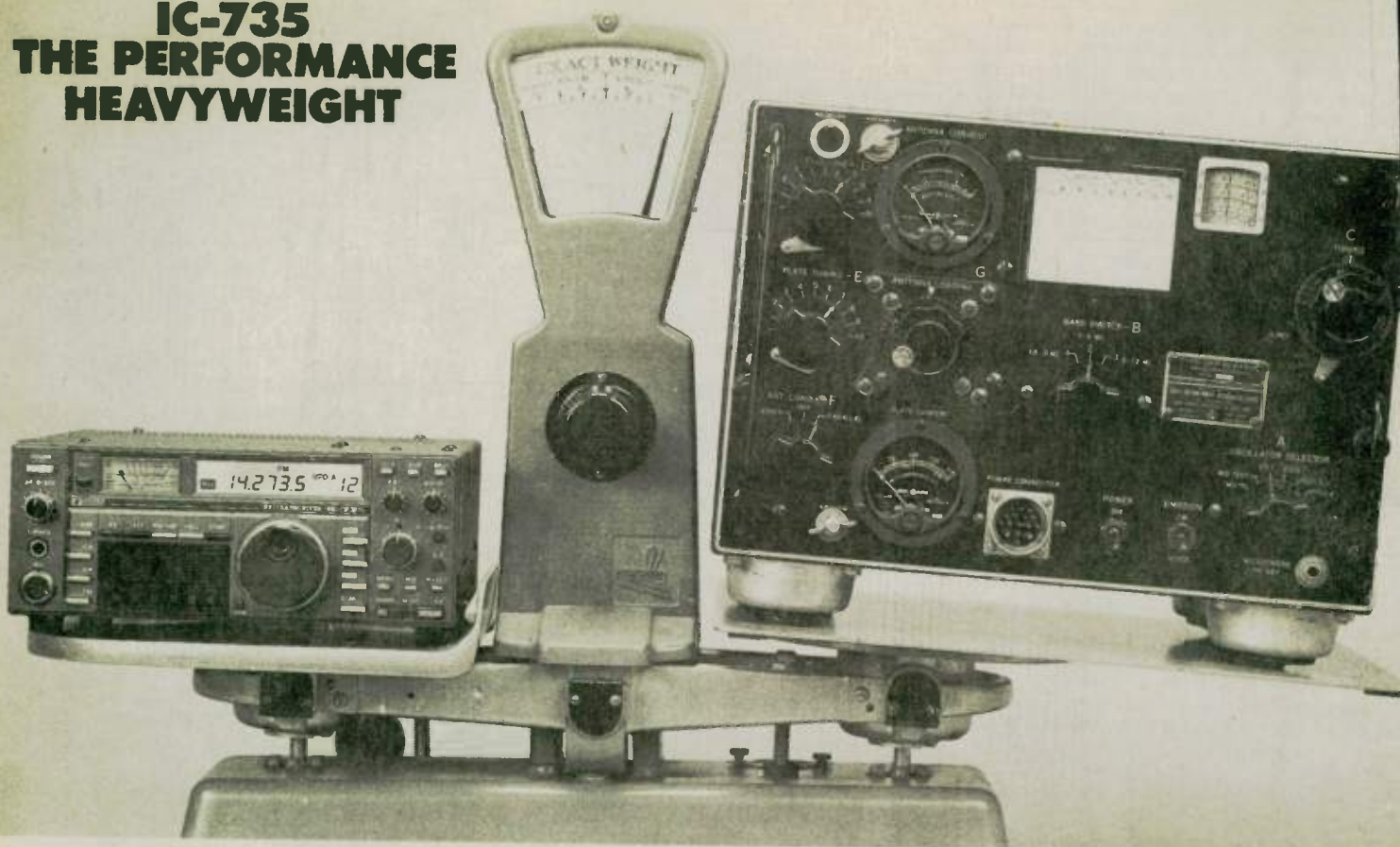
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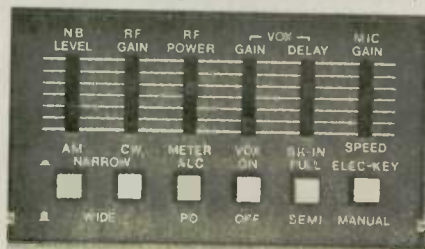
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